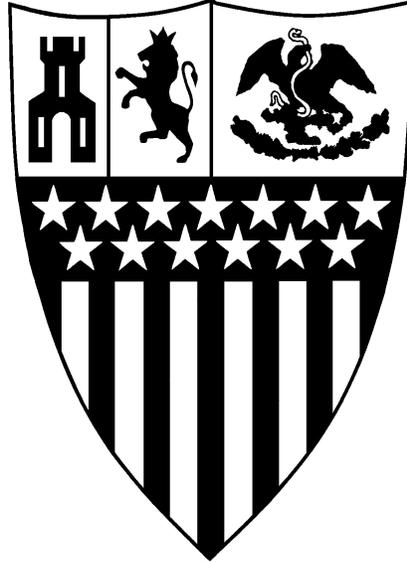


City of Santa Fe, New Mexico



“REQUEST FOR BIDS”

BID # '14/36/B

FY 13/14 WATER DIVISION ADMINISTRATION BUILDING PHOTOVOLTAIC SYSTEM INSTALLATION

BIDS DUE:

May 19, 2014

2:00 P.M.

PURCHASING OFFICE

CITY OF SANTA FE

2651 SIRINGO ROAD – BUILDING “H”

BIDDING / CONTRACT DOCUMENTS

INDEX TO BIDDING/CONTRACT DOCUMENTS

PRE-BID INFORMATION 4
 Debarred or Suspended Contractors 4
 Advertisement For Bids..... 5
 Bid Schedule 7

INSTRUCTIONS TO BIDDERS (SECTION 00100)..... 8
 Definitions and Terms 8
 Examination of Bidding Documents and Site 8
 Bidding Documents..... 8
 Bidding Procedures 9
 Consideration of Bids..... 15
 Post-Bid Information..... 16
 Minimum Wage Rates..... 17
 Other Instructions to Bidders..... 18
 Department of Workforce Solutions Registration 18

INFORMATION AVAILABLE TO BIDDERS 19

BID FORMS 21
 Fixed Unit Price Schedule 22
 Bid Form 23

SUPPLEMENT TO BID FORMS..... 27
 Bid Bond (Sample Form) 28
 Local Preference Certification Form 29
 Resident Veterans Preference Certification..... 31
 Bid Security Form 32
 Agent’s Affidavit..... 33
 Subcontractor Listing 34
 Statement of Bidder’s Qualifications 35
 Non-Collusion Affidavit of Prime Bidder 37
 Certification of Nonsegregated Facilities 38
 Certification of Bidder Regarding Equal Employment Opportunity 39

AGREEMENT FORMS..... 40

BONDS, CERTIFICATES, AND NOTICES (Sample Forms)..... 49
 Performance Bond 50
 Labor and Material Payment Bond..... 50
 Certificate of Insurance 52
 Official Notice-to-Proceed 53

GENERAL CONDITIONS OF THE CONTRACT 54
 Table of Articles..... 55
 Change Orders..... 75

SUPPLEMENTARY CONDITIONS 81

CONTRACT EXHIBITS 86
 EXHIBIT I – WAGE RATES AND LABOR ENFORCEMENT FUND REGISTRATION 87
 EXHIBIT II – TECHNICAL SPECIFICATIONS 96
 EXHIBIT III – CITY OF SANTA FE MINIMUM WAGE ORDINANCE INFORMATION..... 164
 EXHIBIT IV– Public Utilities Department Water Division Construction Standards and Specifications 165
 EXHIBIT V - CONSTRUCTION DRAWINGS..... 218

DIVISION O - BIDDING & CONTRACT REQUIREMENTS

PRE-BID INFORMATION
ADVERTISEMENT FOR BIDS
INVITATION FOR BID
INSTRUCTIONS TO BIDDERS
INFORMATION AVAILABLE TO BIDDERS
BID FORMS
SUPPLEMENTS TO BID FORMS
AGREEMENT FORMS
BONDS, CERTIFICATES, AND NOTICES
GENERAL CONDITIONS OF THE CONTRACT
SUPPLEMENTARY CONDITIONS

CITY OF SANTA FE
CAPITAL IMPROVEMENTS PROGRAM

ADVERTISEMENT FOR BIDS

SEALED BIDS FOR: INVITATION FOR BID NO. '14/36/B
Sangre de Cristo Water Division
Administration Building Photovoltaic
System Installation

TO BE OPENED AT: PURCHASING OFFICE
2651 SIRINGO ROAD, BUILDING H
SANTA FE, NEW MEXICO 87505
(505) 955-5711

TIME: 2:00 P.M. LOCAL PREVAILING TIME

DATE: May 19, 2014

ADDRESSED TO: CITY PURCHASING OFFICER
CITY OF SANTA FE
2651 SIRINGO ROAD, BUILDING H
SANTA FE, NEW MEXICO 87505

Bids will be received until the above time, then opened publicly at the Purchasing Director's office or other designated place, and read aloud. BIDS RECEIVED AFTER THE ABOVE TIME WILL BE RETURNED UNOPENED.

Bidding Documents may be obtained (**purchased**) at the Sangre De Cristo Water Division offices, located at 801 W. San Mateo Road, Santa Fe, New Mexico 87505, upon **non-refundable** payment of \$20.00 for each complete set. No refunds will be made upon return of Bid Documents, the City encourages recycling. An electronic version of the document may be downloaded from the following web site: <http://www.santafenm.gov/bids.aspx> Please note that if you do download the Bid Document and do not notify the Water Division in writing, you risk not being notified of any changes or addenda. The City will not be responsible for any issues arising from missed communications due to downloaded Bid Documents.

Bidding documents are also available at the following plan rooms:

Builders News
3435 Princeton, NE
Albuquerque, NM 87107

Construction Reporter
1609 Second, NW
Albuquerque, NM 87102

F. W. Dodge
1615 University Blvd., NE, Ste. 1
Albuquerque, NM 87102

ADVERTISEMENT FOR BIDS+

BID NO. '14/36/B

Bids for the Contract will be presented in the form of a unit price bid. The bidder shall bid all items listed. Award will be made to the responsible bidder providing the lowest total base bid. Bidder shall include in the signed documents their license(s) and classification(s).

Bid security, made payable to the City of Santa Fe, the "Owner", in the amount of 5% of the proposal sum shall be submitted with the Bid. Bid security shall be in the form of a Bid Bond issued by Surety licensed to conduct business in the State of New Mexico, or by certified check. The successful Bidder's security shall be retained by the Owner until the Contract is signed; the other Bidders' security shall be returned as soon as practicable. Failure or refusal by the successful Bidder to enter into Contract with the Owner will constitute Liquidated Damages in favor of the Owner. The bid shall also include a signed "Non-Collusion Affidavit of Prime Bidders", signed "Certificate of Non-Segregated Facilities", a signed "Certificate of Bidder Regarding Equal Employment Opportunity", a Subcontractor's Listing, Bidder's Qualification, current Registration with the State of New Mexico Department of Workforce Solutions and; if applicable, a Local or Resident Veteran's Preference Application. The project is subject to the New Mexico Department of Workforce Solutions, Minimum Wage Rates for the State of New Mexico. Such wage rates are bound into the Contract Documents. The successful Bidder shall, upon notice of award of contract, secure from each of his Subcontractors a signed "Non-Collusion Affidavit of Subcontractors".

The Owner reserves the right to reject any and all Bids, to waive technicalities, and to accept the Bid it deems to be in the best interest of the City of Santa Fe.

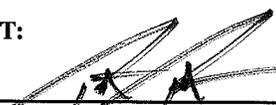
Contracting services are required for the Water Division Administration Building Photovoltaic System Installation project. The work is designated as City of Santa Fe Project, Water Division Administration Building Photovoltaic System Installation project. The work consists of, but is not limited to complete in place installation of 94.2 KW photovoltaic systems including site lighting, power improvements, modifications to the existing site gate, and site restoration, in accordance with the drawings, specifications, and other contract documents. The location of the project is the main building for the SDCW Division located at 801 W. San Mateo Road, Santa Fe, New Mexico 87505.

Contractor shall be responsible for any and all permits, fees, and State and City inspections associated with the construction.

The City of Santa Fe is an Equal Opportunity Employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation or national origin. The successful Bidder will be required to conform to the Equal Opportunity Employment Regulations.

Bids will be received by the City of Santa Fe and will be delivered to City of Santa Fe, Purchasing Office, 2651 Siringo Road, Bldg. H Santa Fe, New Mexico 87505 until 2:00 P.M. local prevailing time, May 19, 2014. Any bid received after this deadline will not be considered.

ATTEST:



Robert Rodarte, Purchasing Officer
City of Santa Fe, New Mexico

Received by the Santa Fe New Mexican on: 04/17/14
To be published on: 04/23/14

Received by the Albuquerque Journal on: 04/17/14
To be published on: 04/23/14

BID SCHEDULE

- | | | |
|----|----------------------------|---|
| 1) | ADVERTISEMENT: | April 23, 2014 |
| 2) | ISSUANCE OF BID PACKET: | April 23, 2014 |
| 3) | BID SUBMITTAL DEADLINE: | May 19, 2014 |
| 5) | OPENINGS OF BIDS RECEIVED: | May 19, 2014 |
| | | 2:00 PM local prevailing time
City of Santa Fe – Purchasing Division
2651 Siringo Road, Bldg. H
Santa Fe, New Mexico 87505
(505) 955-5711 |
| 6) | RECOMMENDATION OF AWARD: | |
| | FINANCE COMMITTEE: | June 2, 2014 |
| | PUBLIC WORKS COMMITTEE: | June 4, 2014 |
| | CITY COUNCIL: | June 11, 2014 |

DATES OF CONSIDERATION BY PUBLIC WORKS/CIP AND LAND USE COMMITTEE, FINANCE COMMITTEE AND CITY COUNCIL ARE TENTATIVE AND SUBJECT TO CHANGE WITHOUT NOTICE.

INSTRUCTIONS TO BIDDERS (SECTION 00100)

1.0 DEFINITIONS AND TERMS

- 1.1 Terms used in these Bidding Documents which are defined in the Conditions of the Contract for Construction (General, Supplementary, and other conditions) have the meanings assigned to them in those Conditions.

2.0 EXAMINATION OF BIDDING DOCUMENTS AND SITE

- 2.1 Before submitting a Bid, each Bidder must (a) examine the Bidding Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress, or performance of the work, (c) familiarize himself with Federal, State, and local laws, ordinances, rules, and regulations that may in any manner effect cost, progress, or performance of the work, and (d) study and carefully correlate the Bidder's observations with the Bidding Documents.
- 2.2 On request, the City of Santa Fe, the "Owner", will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid.
- 2.3 The lands upon which the work is to be performed, rights-of-way for access thereto, and other lands designated for use by the Contractor in performing the work are identified in the Bidding Documents.
- 2.4 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Section and that the Bidding Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the work.

3.0 BIDDING DOCUMENTS

3.1 COPIES OF BIDDING DOCUMENTS

- 3.1.1 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Invitation may be obtained from the Owner (unless another issuing office is designated in the Invitation for Bid). The deposit, if any, will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good and complete condition within ten (10) calendar days after opening of Bids.
- 3.1.2 Complete sets of Bidding Documents shall be used in preparing Bids; the Owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.1.3 The Owner, in making copies of Bidding Documents available on the above terms, does so only for the purpose of obtaining Bids on the work and does not confer a license or grant for any other use.

3.2 INTERPRETATIONS

- 3.2.1 All questions about the meaning or intent of the Bidding Documents shall be submitted to the Purchasing Officer in writing. Replies will be issued by Addenda provided to all parties recorded by the Owner as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

3.3 SUBSTITUTE MATERIAL AND EQUIPMENT

The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute of “or-equal” items. Whenever it is indicated in the Drawings or specified in the Specifications that substitute an “or-equal” item of material or equipment may be furnished or used by the Contractor if acceptable to the Owner, application for such acceptance will not be considered by the Owner until after the “effective date of the Contract.” Application to utilize substitute material or equipment shall be made to the Owner's Representative in writing, stating the request and the justification. If the substitution is accepted, the agreement between Contractor and Owner shall be documented in writing.

3.4 ADDENDA

- 3.4.1 Addenda will be provided to all who are known by the Owner to have received a complete set of Bidding Documents.
- 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
- 3.4.3 No Addenda will be issued later than four days prior to the date for receipt of Bids, except an addendum with drawings or Request for Bids or one which includes postponement for the date for receipt of Bids.
- 3.4.4 Each Bidder shall ascertain, prior to submitting the Bid, that the Bidder has received all Addenda issued, and shall acknowledge their receipt in the Bid.
- 3.4.5 The City reserves the right to not comply with these time frames if a critical addendum is required or if the proposal deadline needs to be extended due to a critical reason in the best interest of the City of Santa Fe.

4.0 BIDDING PROCEDURES

The person or persons opening the bids will adhere to the following procedure and check for the following:

- 4.0.1 Bid – Name of the Bidder and the Number of the Bidder’s New Mexico Contractor’s License with a check for proper signatures.
- 4.0.2 Bid Bond.
- 4.0.3 Non-Collusion Affidavit of Prime Bidder.
- 4.0.4 Submittal, acknowledgement of Addenda, if any.
- 4.0.5 Properly executed Bid Form.
- 4.0.6 Certification of Equal Employment Opportunity
- 4.0.7 Certification of Non-segregated Facilities.
- 4.0.8 Subcontractor’s Listing (as applicable).
- 4.0.9 Bidder's Qualifications Form
- 4.0.10 Current Certificate of Registration with New Mexico Department of Workforce Solution

TWO COMPLETE COPIES OF THE BID SUBMITTAL ARE REQUIRED

If any of the above requirements have not been met, the bid shall be disqualified and considered a non-responsive bid. Any disqualified bids will not be read.

4.1 FORM AND STYLE OF BIDS

- 4.1.1 Bids shall be submitted on forms identical to the form included with the Bidding Documents.
- 4.1.2 All blanks on the Bid Form shall be filled in by typewriter or manually in ink.
- 4.1.3 Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and, in case of discrepancy between the two, the amount written in words shall govern.
- 4.1.4 Any interlineations, alteration, or erasure must be initialed by the signer of the Bid.
- 4.1.5 All requested Additive or Deductive Alternate Bids shall be Bid. If no change in the Base Bid is required, enter "No Change."
- 4.1.6 Where there are two or more major items of work (identified as "Bid Lots") for which separate quotations are requested, the Bidder may, at his discretion, submit quotations for any or all items, unless otherwise specified. Additionally, the Bidder may submit a lump sum price for all lots for which the Bidder has submitted separate quotations.
- 4.1.7 Each copy of the Bid shall include the complete name of the Bidder and a statement that the Bidder is an individual, a sole proprietor, a partnership, a corporation or joint venture. The Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the applicable New Mexico Certificate of Incorporation number or Certificate of Authority number. The Bid shall include the current Contractor's license number and type, and the current Contractor's preference number. A Bid submitted by an agent shall have a current Power of Attorney attached certifying the agent's authority to bind the Bidder.
- 4.1.8 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).
- 4.1.9 The address, to which communications regarding the Bid are to be directed, must be shown.

4.2 BID SECURITY

- 4.2.1 Bid security in an amount equal to at least 5% of the amount of the Bid shall be a bond provided by a Surety company authorized to do business in this State, or the equivalent in the form of a certified check, or otherwise supplied in a form satisfactory to the Owner. All Bonds shall be executed by such sureties as are named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies.
- 4.2.2 The Bid security shall be in the amount of five percent (5%) of the highest Bid amount submitted, unless otherwise stipulated, pledging that the Bidder will enter into a Contract with the Owner in the terms stated herein and will furnish bonds covering the faithful performance of the Contract and payment of all obligations arising there under. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the Bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.
- 4.2.3 The Owner will have the right to retain the Bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.
- 4.2.4 When the Bidding Documents require Bid security, noncompliance by the Bidder requires that the Bid be rejected.

4.2.5 If a Bidder is permitted to withdraw his Bid before award, no action shall take place against the Bidder or the Bid security.

4.3 This Section Reserved

4.4 RESIDENT PREFERENCE & LOCAL PREFERENCE & RESIDENT VETERANS PREFERENCE

INTENT AND POLICY

The City of Santa Fe recognizes that the intent of the state resident preference statute is to give New Mexico businesses and contractors an advantage over those businesses, manufacturers and contractors from outside the State of New Mexico. The underlying policy is to give a preference to those persons and companies who contribute to the economy of the State of New Mexico by maintaining businesses and other facilities within the state and giving employment to residents of the state (1969 OP. Att'y Gen. No. 69-42). The City also has adopted a policy to include a local preference to those persons and companies who contribute to the economy of the County of Santa Fe by maintaining businesses and other facilities within the county and giving employment to residents of the county.

APPLICATION-IN-STATE AND OUT OF STATE BIDDERS

With acknowledgment of this intent and policy, the preference will only be applied when bids are received from in-state and county businesses, manufacturers and contractors that are within 5% of low bids received from out-of-state businesses, manufacturers and contractors (13-1-21 (A) -1-21 (F) and 13-4-2 (C) NMSA 1978).

To be considered a resident for application of the preference, the in-state bidder must have included a valid state purchasing certification number with the submitted bid.

Thus it is recommended that in-state bidders obtain a state purchasing certification number and use it on all bids, in order to have the preference applied to their advantage, in the event an out-of-state bid is submitted. In submitting a bid, it should never be assumed that an out-of-state bid will not be submitted.

For information on obtaining a state purchasing certification number, the potential bidder should contact the State of New Mexico Taxation and Revenue Department.

All resident preferences shall be verified through the State Purchasing Office. Applications for resident preference not confirmed by the state Purchasing Office will be rejected. The certification must be under the bidder's business name submitting the bid.

NON-APPLICATION-COMPETING IN-STATE BIDDERS

If the lowest responsive bid and the next responsive bids within 5% of the lowest bid, are all from the state of New Mexico, then the resident preference will not be applied and the state purchasing certification number will not be considered. To be considered an in-state bidder in this situation, the bidders must meet the definition criteria of Chapter 13-1-21 (A)(1) and Chapter 13-4-2 (A) NMSA 1978. After examining the information included in the bid submitted, the city Purchasing Director may seek additional information of proof to verify that the business is a valid New Mexico business. If it is determined by the city Purchasing Director that the information is not factual and the low responsive bid is actually an out-of-state bidder and not a New Mexico business, then the procedures in the previous section may be applied.

If the bidder has met the above criteria, the low responsive "resident" bid shall be multiplied by .95. If that amount is then lower than the low responsive bid of a "non-resident" bidder, the award will be based taking into consideration the resident preference of 5%.

APPLICATION FOR LOCAL PREFERENCE

For the purposes of this section, the terms resident business and resident manufacturer shall be defined as set out in Section 13-1-21 NMSA 1978; the term local as applied to a business or manufacturer shall mean:

Principal Office and location must be stated: To qualify for the local preference, the principal place of business of the enterprise must be physically located within the Santa Fe County Geographic Boundaries. The business location inserted on the Form must be a physical location, street address or such. DO NOT use a post office box or other postal address. Principal place of business must have been established no less than six months preceding application for certification.

The PREFERENCE FACTOR for resident and local preferences applied to bids shall be .95 for resident and .90 for local. The local preference for proposals shall be 1.10.

New Mexico Resident Veteran Business Preference. New Mexico law, Section 13-1-22 NMSA 1978, provides a preference in the award of a public works contract for a "resident veteran business". Certification by the NM Department of Taxation and Revenue for the resident veteran business requires the Offeror to provide evidence of annual revenue and other evidence of veteran status.

An Offeror who wants the veteran business preference to be applied to its proposal is required to submit with its proposal the certification from the NM Department of Taxation and Revenue and the sworn affidavit.

If an Offeror submits with its proposal a copy of a valid and current veteran resident business certificate, 7%, 8%, or 10% of the total weight of all the evaluation factors used in the evaluation of proposal may be awarded.

The local preference or resident business preference is not cumulative with the resident veteran business preference.

Bids for Goods and Services. When bids for the purchase of goods or services pursuant to Section 22 are received, the lowest responsive bid received from those bidders in the first category listed below shall be multiplied by the Preference Factor. If the resulting price of that bid receiving the preference is lower than or equal to the lowest bid of all bids received, the contract shall be awarded to that bidder receiving the preference. If no bids are received from bidders in the first category, or if the bid receiving the preference does not qualify for an award after multiplication by the Preference Factor, the same procedure shall be followed with respect to the next category of bidders listed to determine if the bid qualifies for award. The priority of categories of bidders is:

- (1) Local business.
- (2) Resident business.

Proposals for Goods and Services. When proposals for the purchase of goods or services pursuant to Section 23 are received, the evaluation score of the proposal receiving the highest score of all proposals from those proponents in the first category listed above shall be multiplied by the Preference Factor. If the resulting score of that proposal receiving the preference is higher than or equal to the highest score of all proposals received, the contract shall be recommended to that proponent receiving the preference. If no proposals are received from proponents in the first category, or if the proposal receiving the preference does not qualify for an award after multiplication by the Preference Factor, the same procedure shall be followed with respect to the next category of proposals listed to determine if a proponent qualifies for award.

Qualifications for Resident Preference. No resident business or manufacturer, as defined, shall be given any preference in the awarding of contracts for furnishing goods or services to the city, unless it shall have qualified with the State Purchasing Agent as a resident business or manufacturer and obtained a certification number as provided in Section 13-1-22 NMSA 1978. The certification number must be submitted with its bid for an offeror to qualify for this preference. The Central Purchasing Office shall determine if a resident preference is applicable to a particular offer on a case by case basis.

Qualifications for Local Preference. The Central Purchasing Office shall have available a form to be completed by all bidders/proponents who desire to apply for the local preference as a local business. The completed form with the information certified by the offeror must be submitted by the bidders/proponents with their bid or proposal to qualify for this preference.

Limitation. No offeror shall receive more than a 5% for resident and 10% for local preference pursuant to this section on any one offer submitted. A bidder may not claim cumulative preferences.

Application. This section shall not apply to any purchase of goods or services when the expenditure of federal and/or state funds designated for a specific purchase is involved and the award requirements of the funding prohibit resident and/or local preference(s). This shall be determined in writing by the department with the grant requirements attached to the Purchasing Office before the bid or request for proposals is issued.

Exception. The City Council at their discretion can approve waiving the Local Preference requirements for specific projects or on a case by case basis if it is the City's best interest to do so.

New Mexico Resident Preference Number (if applicable) _____

4.5 SUBCONTRACTORS

4.5.1 The threshold amount for this project is \$5,000.00. The General Contractor must list all Subcontractors who will perform work in excess of this threshold. Only one Subcontractor may be listed for each category as defined by the Contractor. The Subcontractor Fair Practice Act (13-4-31 through 13-4-43 NMSA 1978) shall apply.

The Bidder shall list the Subcontractors or material suppliers he proposes to use for all trades or items on the Subcontractor Listing Form attached to the Bidding Document. If awarded the contract, the Bidder shall use the firm listed, or himself if "General Contractor" has been listed, unless a request for a change or substitution is approved by the Owner for any reason as outlined herein.

4.5.2 The Owner shall consider any request for a change in the listed forms if the Bidder can furnish evidence of being able to perform the work in a manner more satisfactory and beneficial to both the Owner and the Bidder by not using the listed subcontractor. Satisfactory reasons for a substitution may include the inability to bond or lack of evidence of being able to furnish acceptable materials on schedule. Also, if the Bidder has made a legitimate error in listing a low Subcontractor, a request for substitution, made after the Bid Opening with the Owner's approval, will be considered. The proof of error must be conclusive, based upon the approval of said evidence by the listed Subcontractor or material supplier and/or any other confirmation satisfactory to the Owner.

4.5.3 The Bidder shall not list himself as the supplier or as the Subcontractor for any trade unless he has previously performed work of this type or can prove to the Owner's satisfaction that he actually has or will obtain, fully adequate facilities and plans to perform the work with his own forces.

4.5.4 Omission or non-compliance with the intent of the Subcontractor Listing will be grounds for considering a Bid as non-responsive.

4.5.5 Prior to the award of the Contract, the Owner will notify the Bidder in writing if, after due investigation and written findings of fact, the Owner has reasonable and substantial objection to any person or organization on such list and refuses in writing to accept such person or organization, the Bidder may, at his option, (1) withdraw his Bid, or (2) submit an acceptable substitute Subcontractor with no increase in his Bid Price. In the event of withdrawal under this paragraph, Bid security will not be forfeited.

4.5.6 The successful Bidder shall, within seven (7) calendar days of notification of selection for the award of Contract for the work, submit the following information to the Owner:

- (A) A signed list of the proprietary names and the suppliers of principal items or systems of materials and equipment proposed for the work; and
- (B) A list signed by all Subcontractors proposed for the principal portions of the work in accordance with the Subcontractors Listing Form submitted with the Bid.

4.5.7 The successful Bidder will be required to establish to the satisfaction of the Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the work described in the Bidding Documents.

- 4.5.8 Persons and organizations proposed by the Bidder and to whom the Owner has made no reasonable objection under the provisions of Paragraph 4.5.5 must be used on the work for which they were proposed and shall not be changed except with the written consent of the Owner.
- 4.5.9 No successful Bidder shall be required to employ any Subcontractor, other person, or organization against whom he has reasonable objection.

4.6 SUBMISSION OF BIDS

- 4.6.1 Bids shall be submitted at the time and place indicated in the Invitation for Bid and shall be submitted in a sealed envelope marked with the Project title and name and address of the Bidder, New Mexico License # _____, and accompanied by the Bid Security, Subcontractors Listing, and other required documents listed in the Bid Documents.
- 4.6.2 The envelope shall be addressed to:

Purchasing Officer
City of Santa Fe
2651 Siringo Road, Building H
Santa Fe, NM 87505

The following information shall be provided on the front of the Bid envelope: Invitation for Bid number, date of opening, time of opening, and New Mexico License Number. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BIDS ENCLOSED" on the face thereof.

- 4.6.3 Bids received after the date and time for receipt of Bids will be returned unopened.
- 4.6.4 The Bidder shall assume full responsibility for timely delivery of Bids at the office of the City's Purchasing Division, including those Bids submitted by mail. Hand-delivered Bids shall be submitted at the front desk of the City Purchasing Division and will be clocked in at the time received, which must be prior to the time specified. Bids will then be held for public opening.
- 4.6.5 Oral, telephonic, or telegraphic Bids are invalid and will not receive consideration.

4.7 CORRECTION OR WITHDRAWAL OF BIDS

- 4.7.1 A Bid containing a mistake discovered before Bid Opening may be modified or withdrawn by a Bidder prior to the time set for Bid Opening by delivering written or telegraphic notice to the location designated in the Invitation for Bid as the place where Bids are to be received.
- 4.7.2 Bid security, if required, shall be in an amount sufficient for the Bid as modified or resubmitted in conformance with Section 4.2.
- 4.7.3 Withdrawn Bids may be resubmitted up to the time and date designated for the receipt of Bids, provided they are then fully in conformance with the Bid Documents.
- 4.7.4 After Bid Opening, no modifications in Bid prices or other provisions of Bids shall be permitted. A low Bidder alleging a material mistake of fact which makes his Bid non-responsive may be permitted to withdraw his Bid if:
 - (A) The mistake is clearly evident on the face of the Bid document; or
 - (B) The Bidder submits evidence which clearly and convincingly demonstrates that a mistake was made.

Any decision by the Owner to permit or deny the withdrawal of a Bid on the basis of a mistake contained therein shall be supported by a determination setting forth the grounds for the decision. If withdrawal is permitted, Bid security will not be forfeited.

4.8 NOTICE OF CONTRACT REQUIREMENTS BINDING ON BIDDER

4.8.1 In submitting this Bid, the Bidder represents that he has familiarized himself with the nature and extent of the following requirements of the Conditions of the Construction Contract (General, Supplementary, and Other Conditions).

- (A) Definitions – General Conditions, Sections 1.1 to 16.1;
- (B) Supplementary Conditions, Sections 1.0 to 1.17;
- (C) Bribes, Gratuities, and Kickbacks – Supplementary Conditions, Section 4.0;
- (D) Contract Bond Requirements – Supplementary Conditions, Section 6.0
- (E) Equal Employment Opportunity – Labor Standards Provisions and other listed within the Contract Documents.

4.9 REJECTION OR CANCELLATION OF BIDS

4.9.1 An Invitation for Bid may be canceled, or any or all Bids may be rejected in whole or in part, when it is in the best interest of the Owner. A determination containing the reasons shall be made part of the Project file. Bid security for rejected Bids shall be returned to the Bidder.

4.10 PROTESTS

4.10.1 Any Bidder, Offeror, or Contractor who is aggrieved in connection with this procurement (Bid) may protest to the City Purchasing Agent and the Owner in accordance with the requirements. The protest should be made in writing within twenty-four (24) hours after the facts or occurrences giving rise thereto, but in no case more than within fifteen (15) calendar days after the facts or occurrences giving rise thereto.

4.10.2 The complete procedures and requirements regarding protest are available from the Purchasing Office upon request.

4.11 COMPETITIVE SEALED BIDS

4.11.1 Contracts solicited by competitive sealed Bids shall require that the base Bid amount exclude the applicable state gross receipts taxes or applicable local option taxes, but that the contracting agency shall be required to pay the applicable taxes including any increase in the applicable tax which becomes effective after the date the Contract is entered into. The applicable gross receipts taxes or local option taxes shall be shown as a separate amount on each billing or request for payment made under the contract.

5.0 CONSIDERATION OF BIDS

5.1 RECEIPT, OPENING, AND RECORDING

5.1.1 Bids received on time will be opened publicly and will be read aloud, and an abstract of the amounts of the Base Bids and Alternates or Bid items, if any, will be made available to the Bidders. Each Bid shall be open to public inspection. The Owner shall have the right to waive any informalities or irregularities in any Bid or Bids received and to accept the Bid or Bids which are in the Owner's best interest.

5.2 BID EVALUATION AND AWARD

5.2.1 It is the intent of the Owner to award a Contract to the responsible Bidder submitting the lowest base bid provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The unreasonable failure of a

Bidder to promptly supply information in connection with an inquiry with respect to responsibility is grounds for a determination that the Bidder is not a responsible Bidder.

- 5.2.2 Discrepancies in the Bid Form between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

5.3 NOTICE OF AWARD

A written Notice of Award shall be issued by the Owner after review and approval of the Bid and related documents by the Governing Authority, "as defined in the Supplementary Conditions", with reasonable promptness.

5.4 IDENTICAL BIDS

5.4.1 When two or more of the Bids submitted are identical in price and are the low Bid, the City Purchasing Agent or the Owner may:

- (A) Award pursuant to the identical low bid provisions of the City Purchasing Manual;
- (B) Award to a resident local business if the identical low Bids are submitted by a resident or local business and a non-resident business;
- (C) Award to resident or local manufacturer if the identical low Bids are submitted by a resident or local manufacturer and a resident business;
- (D) Award by lottery to one of the identical low Bidders; or
- (E) Reject all Bids and re-solicit Bids or proposals for the required services, construction, or items of tangible personal property.

5.5 CANCELLATION OF AWARD

5.5.1 When in the best interest of the public, the Owner may cancel the award of any Contract at any time before the execution of said Contract by all parties without any liability against the Owner.

6.0 POST-BID INFORMATION

6.1 RETURN OF BID SECURITY

All Bid security in the form of checks, except those of the two lowest Bidders, will be returned immediately following the opening and checking of the Bids. The retained Bid security of the unsuccessful of the two lowest Bidders, if in the form of a check, will be returned within fifteen (15) days following the award of contract. The retained Bid security of the successful Bidder, if in the form of a check, will be returned after a satisfactory Contract bond has been furnished and the Contract has been executed. Bid securities in the form of Bid bonds will be returned only upon the request of the unsuccessful Bidder, but will be released by the City Purchasing Agent after the Notice of Award is sent by the Owner.

6.2 NOTICE TO PROCEED

The Owner will issue a written Notice to Proceed to the Contractor stipulating the date from which Contract Time will be charged and the date Contract Time is to expire, subject to valid modifications of the Contract authorized by Change Order.

6.3 FAILURE TO EXECUTE CONTRACT

Failure to return the signed Contract with acceptable Contract Bonds and Certificate of Insurance within fifteen (15) calendar days after the date of the Notice of Award shall be just cause for the cancellation of the award and the forfeiture of the Bid security, which shall become damages sustained. Award may then be made to the next lowest responsible Bidder, or the work may be re-advertised and constructed under Contract or otherwise, as the Owner may decide.

6.4 CONTRACTOR'S QUALIFICATION STATEMENT

Bidders to whom award of a Contract is under consideration shall submit information and data to prove that their financial resources, production or service facilities, personnel and service reputation and experience are adequate to make satisfactory delivery of the services, construction, or items of personal property described in the Bid Documents and form of Statement of Bidder's Qualifications.

6.5 CONTRACT BONDS REQUIREMENTS

6.5.1 The successful Bidder, where the Contract price exceeds twenty five thousand dollars (\$25,000.00), shall post a one hundred percent (100%) Performance Bond and one hundred percent (100%) Labor and Material Payment Bond. Bonds shall be executed on Performance Bond and Labor and Material Payment Bond forms attached hereto, with amount payable conforming to the terms of the Contract. Surety shall be a company licensed to do business in the State of New Mexico and acceptable to the Owner.

6.6 INSURANCE REQUIREMENTS

6.6.1 The selected Bidder shall purchase and maintain, in a company or companies licensed to do business in the State of New Mexico, Liability and Property Insurance as required by law.

6.6.2 The insurance shall be in limits not less than those stated in the General Conditions, enclosed in the Bid package, or greater if required by law.

6.6.3 The insurance coverage shall include worker's compensation, employers liability, comprehensive general liability (Premises Operations, independent contractual liability, explosion and collapse hazard, underground hazard, personal injury), Comprehensive automobile liability (owned and hired), excess liability (umbrella form), and all-risk builder's risk.

6.6.4 All insurance coverage must be maintained for the entire life of the project. Products and completed operations coverage shall be maintained for a minimum period of one (1) year after final payment.

6.6.5 A valid certificate of insurance must be submitted to the Owner prior to issuance of a Notice-to-Proceed.

7.0 MINIMUM WAGE RATES

7.1 Pursuant to the requirements of any Contract entered into in excess of sixty thousand dollars (\$60,000) for construction, alteration, demolition, or repair, or any combination of these, including painting and decorating of public buildings or public works, Contract may be subject to the minimum wage rate determination issued by the New Mexico Department of Workforce Solutions for this project.

7.2 COMPLIANCE WITH CITY'S MINIMUM WAGE RATE ORDINANCE (LIVING WAGE ORDINANCE)

A copy of the City of Santa Fe Ordinance No. 2003-8, passed by the Santa Fe City Council on February 26, 2003 is attached. The proponent or bidder will be required to submit the proposal or bid such that it complies with the ordinance to the extent applicable. The recommended Contractor will be required to comply with the ordinance to the extent applicable, as well as any subsequent changes to the Ordinance throughout the term of this contract. This project is subject to Wage Rate Determination **SF-13-1467A**.

8.0 OTHER INSTRUCTIONS TO BIDDERS

- 8.1 The Owner will make copies of available reports available to any Bidder requesting them. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Bidding Documents. Before submitting his Bid, each Bidder shall, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the work in accordance with the time, price, and other terms and conditions of the Bidding Documents.
- 8.2 It shall be the responsibility of the successful Bidder to secure from the New Mexico Regulations & Licensing Department, Construction Industries Division (CID) such permits or licenses required to carry out the construction. The City will also be responsible for the inspection of all work during construction and to issue a Certificate of Occupancy upon completion and acceptance of the construction by the City of Santa Fe.

9.0 STATE OF NEW MEXICO, DEPARTMENT OF WORKFORCE SOLUTIONS, LABOR RELATIONS, PUBLIC WORKS BUREAU CONTRACTOR AND SUBCONTRACTOR REGISTRATION

- 9.1 A contractor or subcontractor that submits a bid valued at more than fifty thousand dollars (\$50,000) for a city project that is subject to the Public Works Minimum Wage Act (13-4-10 NMSA 1978) shall be registered with the State of New Mexico, Department of Workforce Solutions, Labor Relations, Public Works Bureau. The registration number shall be provided in the bid submitted for the Contractor in the space provided and for subcontractors with work proposed over \$50,000 on the subcontractor form. After the bid opening, the registration number(s) will be verified by the City and the Bid will be determined to be non-responsive and disqualified if the registration number(s) appear to be not valid and the Contractor does not provide proof of the required registration for itself or its subcontractors with work proposed over fifty thousand dollars (\$50,000). It is the responsibility of the Contractor and the Subcontractor to ensure that the registration is completed prior to the Bid Opening.

**INFORMATION AVAILABLE
TO BIDDERS**

(SECTION 00200)

INFORMATION AVAILABLE TO BIDDERS

Notice-to-Proceed
Substantial Completion Date

July 1, 2014
January 31, 2015

The work is designated as City of Santa Fe Project, Water Division Administration Building Photovoltaic System Installation project. The work consists of, but is not limited to: complete in place installation of a 94.2KW photovoltaic system including site lighting, power improvements, modifications to the existing site gate, and site restoration, in accordance with the drawings, specifications, and other contract documents. The location of the project is the main building for the Water Division Administration Building located at 801 W. San Mateo Road, Santa Fe, New Mexico 87505.

EXISTING CONDITIONS

Most work will be under existing asphalt and unpaved surfaces. There is existing lighting in the parking lots, some of which will be removed.

OPERATIONAL TIME FRAME

The project must be substantially complete by January 30, 2015. Substantial completion must include interconnect and final approval of the system from PNM.

(Instructions: Owner of Record to provide a description of existing site, existing buildings, or other existing conditions if information is necessary and not included elsewhere in the Bidding Documents.)

BID FORMS
(SECTION 00300)

FIXED UNIT PRICE SCHEDULE

BID ITEM	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	AMOUNT
10	Structural – Canopy Construction: Complete installation, including materials and concrete piers	Lump Sum			\$
20	Building Electrical Upgrades	Lump Sum		\$	\$
30	Modifications to Side Gate: To include moving the gate, reinstalling fencing and all electrical work and site restoration	Lump Sum			\$
40	Complete Photovoltaic Installation including materials and electrical interconnection	Lump Sum			\$
50	Asphalt Pavement Removal & Disposal	SY	100	\$	\$
60	Replace Pavement	SY	100	\$	\$
70	Removal of Existing Parking Lot Striping and Restriping of Parking Lot	Lump Sum		\$	\$

TOTAL BID AMOUNT (MUST EQUAL THE SUM OF ITEMS 10-70): \$ _____

NMGRT: _____

TOTAL BID AMOUNT: _____

The City reserves the right to alter quantities based on availability of budget. If this will alter the bid amount, the bidder must note the percent increase for lesser quantities.

Equipment Manufacturer

Bidder must submit the name of the manufacturer for the following components

Equipment

Manufacturer Name

Canopy Structure

Photovoltaic Panels

Inverters

CITY OF SANTA FE, NEW MEXICO
BID FORM (SECTION 00310)

**LUMP SUM PRICE OR
UNIT PRICE BID**

Section 00310

Invitation No: '14/36/B

Project: Water Division Administration
Building Photovoltaic System
Installation

Project No:

Date:

This Bid is submitted to: CITY OF SANTA FE
PURCHASING DIRECTOR
2651 SIRINGO ROAD, BUILDING H
SANTA FE, NEW MEXICO 87505

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the Owner in the form included in the Bidding Documents to perform and furnish all work as specified or indicated in the Bidding Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. The Bidder accepts all of the terms and conditions of the Invitation for Bid and Instructions to Bidders, including, without limitation, those dealing with the disposition of Bid security and other Bidding Documents. This Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening. The Bidder shall sign and submit the Agreement between Owner and Contractor (hereinafter called Agreement) with the bonds and other documents required by the Bidding Requirements within fifteen (15) calendar days after the date of the Owner's Notice to Award.
3. In submitting this Bid, the Bidder represents, as more fully set forth in the Agreement, that:
 - A. The Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all of which is hereby acknowledged):

No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____
 - B. The Bidder has familiarized himself with the nature and extent of the Bidding Documents, work, site, locality, and all local conditions, laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of the work.
 - C. The Bidder has carefully studied all reports and drawings of subsurface conditions which are identified in the Information Available to Bidders and accepts the determination set forth in the Information Available to Bidders of the extent of the technical data contained in such reports and drawings upon which the Bidder is entitled to rely.
 - D. The Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Bidding Documents.
 - E. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is submitted in conformity with any agreement or rules of any group, association, organization, or corporations. The Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; the Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and the Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over the Owner. It is understood that the Owner reserves the right to reject any or all Bids and to waive any technical irregularities in the bidding.

- F. It is the intent of the City to award a Contract to the responsible Bidder submitting the lowest total base bid, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents.
4. The work is designated as City of Santa Fe Project, Water Division Administration Building Photovoltaic System Installation project, and consists of, but is not limited to: complete in place installation of a 94.2KW photovoltaic system including site lighting and power improvements and site restoration, in accordance with the drawings, specifications, and other contract documents. The location of the project is the Water Division Administration Building 801 W. San Mateo Road.

Contractor shall be responsible for verifications of all items, measurements and dimensions for bidding.

Contractor shall be responsible for all permits, fees, and State and City inspections associated with the construction.

(All prices listed below are for a complete installed product and include all labor, materials, equipment, bonding, insurance, etc.)

The Bidder shall complete the work for the following prices:

Total Base Bid: _____ (\$ _____)
use words use numbers

TWO COMPLETE COPIES OF THE BID SUBMITTAL ARE REQUIRED

5. The Bidder agrees that:
- A. The work to be performed under the Contract shall be commenced not later than ten (10) consecutive calendar days after the date of written Notice to Proceed, and that completion shall be achieved not later than January 31, 2015, except as hereafter extended by valid written Change Order by the Owner.
 - B. Should the Contractor neglect, refuse, or otherwise fail to complete the work within the time specified, the Contractor agrees, in partial consideration for the award of this Contract, to pay the Owner the amount of One-Thousand Dollars (\$1,000.00) per consecutive calendar day that passes until the work is complete, not as a penalty, but as liquidated damages for such breach of the Contract.
 - C. The above process shall include all labor, profit, insurance, taxes, etc., to cover the finished work of the several kinds called for. Changes shall be processed in accordance with the Contract Documents.
 - D. It is understood that the Owner reserves the right to reject any or all Bids and to waive any technical irregularities in the bidding.
6. The following documents are attached to and made a condition of this Bid:
- A. Bid Bond
 - B. Non-Collusion Affidavit of Prime Bidder
 - C. Submittal, acknowledgement of Addenda, if any
 - D. Properly executed Bid Form
 - E. Certification of Equal Employment Opportunity
 - F. Certification of Non-segregated Facilities
 - G. Subcontractor's Listing (as applicable)
 - H. Bidder's Qualifications Form
 - I. Current Certificate of Registration with New Mexico Department of Workforce Solutions

If any of the above requirements have not been met, the bid will be considered to be non-responsive.

7. The terms used in this Bid and the Bidding and Contract Documents are defined in the Conditions of the Construction Contract (General, Supplementary, and Other Conditions)

8. If the Bidder is:

A. AN INDIVIDUAL:

By: _____
(Individual's Name)

doing business as: _____

Business address: _____

Telephone: _____

(SEAL)

B. A PARTNERSHIP:

By: _____
(Firm Name)

(General Partner)

Business address: _____

Telephone: _____

(SEAL)

C. A CORPORATION

By: _____
(Corporation Name)

(State of Incorporation)

By: _____
(Name of person authorized to sign)

(Title)

If a New Mexico Corporation: _____
Certificate of Incorporation No.

If a Foreign Corporation: _____
Certificate of Authority No.

Attest: _____
(Secretary)

Business address: _____

Telephone: _____

D. A JOINT VENTURE

By: _____
(Name)

Address: _____

By: _____
(Name)

Address: _____

Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated in the appropriate category.

Bidder must fill in the following: (If none, write none)

NM License No.: _____ Classification: _____

NM Taxation and Revenue CRS No.: _____

City of Santa Fe Business Registration No.: _____

NM Resident Preference Number (if applicable): _____

TWO COMPLETE COPIES OF THE BID SUBMITTAL ARE REQUIRED

**SUPPLEMENT TO
BID FORMS**

(SECTION 00400)

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we (Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and (Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of as Surety, hereinafter called the Surety, are held and firmly bound unto (Here insert full name and address or legal title of Owner)

as Obligee, hereinafter called the Obligee, in the sum of

Dollars (\$),

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for (Here insert full name, address and description of project)

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this day of 19

(Witness) (Principal) (Seal) (Title)

(Witness) (Surety) (Seal) (Title)

**INSTRUCTIONS RELATING TO
LOCAL PREFERENCE CERTIFICATION FORM**

1. **All information must be provided.** A 10% local preference may be available for this procurement. To qualify for this preference, an offeror **must** complete and submit **the local preference certification form with its offer**. If an offer is received without the form attached, completed, notarized, and signed or if the form is received without the required information, the preference will not be applied. **The local preference form or a corrected form will not be accepted after the deadline for receipt of bids or proposals.**
2. **Local Preference precedence over State Preference:** The Local Preference takes precedence over the State Resident Preference and only one such preference will be applied to any one bid or proposal. If it is determined that the local preference applies to one or more offerors in any solicitation, the State Resident Preference will not be applied to any offers.
3. **Principal Office and location must be stated:** To qualify for the local preference, the principal place of business of the enterprise must be physically located within the Santa Fe County Geographic Boundaries. The business location inserted on the Form must be a physical location, street address or such. **DO NOT** use a post office box or other postal address. Principal place of business must have been established no less than six months preceding application for certification.
4. **Subcontractors do not qualify:** Only the business, or if joint venture, one of the parties of the joint venture, which will actually be performing the services or providing the goods solicited by this request and will be responsible under any resulting contract will qualify for this preference. A subcontractor may not qualify on behalf of a prime contractor.
5. **Definition:** The following definition applies to this preference.

A local business is an entity with its Principal office and place of business located in Santa Fe County. A Principal office is defined as: The main or home office of the business as identified in tax returns, business licenses and other official business documents. A Principal office is the primary location where the business conducts its daily operations, for the general public, if applicable. A temporary location or movable property, or one that is established to oversee a City of Santa Fe project does not qualify as a Principal office.

Additional Documentation: If requested a business will be required to provide, within 3 working days of the request, documentation to substantiate the information provided on the form. Any business which must be registered under state law must be able to show that it is a business entity in good standing if so requested.

LOCAL PREFERENCE CERTIFICATION FORM

RFP/RFB NO: _____

Business Name: _____

Principal Office: _____
Street Address City State Zip Code

City of Santa Fe Business License # _____ (Attach Copy to this Form)

Date Principal Office was established: _____ (Established date must be six months before date of Publication of this RFP or RFB).

CERTIFICATION

I hereby certify that the business set out above is the principal Offeror submitting this offer or is one of the principal Offerors jointly submitting this offer (e.g., as a partnership, joint venture). I hereby certify that the information which I have provided on this Form is true and correct, that I am authorized to sign on behalf of the business set out above and, if requested by the City of Santa Fe, will provide within 3 working days of receipt of notice, the necessary documents to substantiate the information provided on this Form.

Signature of Authorized Individual: _____

Printed Name: _____

Title: _____ Date: _____

Subscribed and sworn before me by _____ this _____, day of _____

My commission expires _____

Notary Public

SEAL

YOU MUST RETURN THIS FORM WITH YOUR OFFER

RESIDENT VETERANS PREFERENCE CERTIFICATION

_____ (NAME OF CONTRACTOR) hereby certifies the following in regard to application of the resident veterans' preference to this procurement.

Please check one box only:

- I declare under penalty of perjury that my business prior year revenue starting January 1 ending December 31 is less than \$1M allowing me the 10% preference discount on this solicitation. I understand that knowingly giving false or misleading information about this fact constitutes a crime.
- I declare under penalty of perjury that my business prior year revenue starting January 1 ending December 31 is more than \$1M but less than \$5M allowing me the 8% preference discount on this solicitation. I understand that knowingly giving false or misleading information about this fact constitutes a crime.
- I declare under penalty of perjury that my business prior year revenue starting January 1 ending December 31 is more than \$5M allowing me the 7% preference discount on this solicitation. I understand that knowingly giving false or misleading information about this fact constitutes a crime.

I agree to submit a report or reports to the State Purchasing Division of the General Services Department declaring under penalty of perjury that during the last calendar year starting January 1 and ending on December 31, the following to be true and accurate:

In conjunction with this procurement and the requirements of this business application for a Resident Veteran Business Preference/Resident Veteran Contractor Preference under Sections 13-1-21 or 13-1-22 NMSA 1978, which awarded a contract which was on the basis of having such veterans preference, I agree to report to the State Purchasing Division of the General Services Department the awarded amount involved. I will indicate in the report the award amount as a purchase from a public body or as a public works contract from a public body as the case may be.

I understand that knowingly giving false or misleading information on this report constitutes a crime.

I declare under penalty of perjury that this statement is true to the best of my knowledge. I understand that giving false or misleading statements about material fact regarding this matter constitutes a crime.

(Signature of Business Representative)* (Date)

*Must be an authorized signatory of the Business.

The representation made by checking the above boxes constitutes a material representation by the business. If the statements are proven to be incorrect, this may result in denial of an award or un-award of the procurement.

SIGNED AND SEALED THIS _____ DAY OF _____, 2012.

NOTARY PUBLIC

My Commission Expires:

THIS FORM MUST BE
ATTACHED TO BOND

BID SECURITY FORM

Section 00420

Review and Approval: This Bond has been executed by a Surety named in the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies,” as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, United States Treasury Department.

Approved:

DATE:

Owner’s Representative or Governing Authority

STATEMENT OF BIDDER'S QUALIFICATIONS

SUPPLEMENTS TO BID FORMS

Section 00440

Instructions: All questions must be answered, and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information desired.

1. Name of Bidder: _____

2. Permanent main office address: _____

3. When organized: _____

4. If a corporation, where incorporated: _____

5. How many years have you been engaged in the contracting business under your present firm or trade name? _____

6. Contracts on hand (schedule these, showing amount of each Contract and the appropriate anticipated dates of completion): _____

7. General character of work performed by your company: _____

8. Have you ever failed to complete any work awarded to you? _____

If so, where and why? _____

9. Have you ever defaulted on a contract? _____

If so, where and why? _____

10. List the more important photovoltaic projects recently completed by your company, stating the approximate cost for each, and the month and year completed:

11. List your major equipment available for this contract:

12. Describe your organization's experience in construction work similar in importance to this project: _____

13. Background and experience of the principal members of your organization, including the officers: _____

14. Credit Available: _____

15. Give bank reference: _____

16. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Owner? ___

17. The undersigned authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder Qualifications

Dated at _____

this _____ day of _____, 20____.

Bidder

By: _____

Title: _____

STATE OF NEW MEXICO)
)ss
COUNTY OF)

_____, being duly sworn, deposes and says that he is _____ of

(Name of Organization)

and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public

My Commission expires: _____

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

Section 00450

STATE OF)
)ss.
COUNTY OF)

_____, being first duly sworn, deposes and says that:

- 1) He is the _____ of _____, the Bidder that has submitted and attached Bid;
2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
3) Such Bid is genuine and is not a collusive or sham Bid;
4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with the Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract or has in any manner directly or indirectly, sought by agreement or collusion or communications or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Santa Fe, or any person interested in the proposed Contract; and
5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

By: _____
Title: _____

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public
My Commission expires: _____

CERTIFICATION OF NONSEGREGATED FACILITIES

Section 00460

(Applicable to construction contracts and related subcontracts exceeding \$10,000 which are not exempt from the Equal Opportunity Clause.)

The construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means: any waiting room, work areas, rest rooms and wash rooms, restaurants and other eating areas; time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin because of habit, local custom, or otherwise. The construction contractor agrees that (except where he has obtained identical certifications from proposed Subcontractors for specific time periods) he will obtain identical certifications from proposed SUBCONTRACTORS prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provision of the Equal Opportunity Clause and that he will retain such certifications in his files.

By: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public

My Commission expires: _____

**CERTIFICATION OF BIDDER REGARDING
EQUAL EMPLOYMENT OPPORTUNITY**

Section 00470

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any Bidder or perspective contractor, or any of their proposed Subcontractors, shall state as an initial part of the Bid or negotiations of the Contract whether he has participated in any previous Contract or subcontract subject to the equal opportunity clause; and, if so, whether he has filed all compliance reports due under applicable instructions.

Where the certification indicates that the Bidder has not filed a compliance report due under applicable instructions, such Bidder shall be required to submit a compliance report within seven calendar days after Bid opening. No Contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER

Bidder's Name: _____

Address: _____

1. Bidder has participated in a previous Contract or subcontract subject to the Equal Opportunity Clause.

_____ Yes _____ No

2. Compliance reports were required to be filed in connection with such Contract or subcontract.

_____ Yes _____ No

Certification - The information above is true and complete to the best of my knowledge and belief.

Name and Title of Signer (please type)

Signature

Date

AGREEMENT FORMS

(SECTION 00500)

REQUEST FOR PROPOSALS ONLY
CITY OF SANTA FE
CAPITAL IMPROVEMENTS PROGRAM

AGREEMENT BETWEEN
OWNER AND CONTRACTOR

Water Division Administration Building Photovoltaic System Installation

This Agreement is entered into this _____ day of _____, 2014, by and between the CITY OF SANTA FE, herein known as the Owner, and (_____), herein known as the Contractor.

For the following:

PROJECT:

PROJECT NO.:

ARCHITECT OF RECORD:

ProteckPark Solar
5513 Vine Street
Cincinnati, Oh 45217
&
Peak Power Engineering, Inc.
1309 Agua Fria
Santa Fe, NM 87501

DISTRIBUTION:

OWNER
CONTRACTOR
ARCHITECT
USER DIVISION
OTHER

Revised March 2011

RECITALS

WHEREAS, the Owner, through its Governing Body, is authorized to enter into a construction Contract for the project; and

WHEREAS, the Owner has let this Contract according to the established State and Local Purchasing procedures for contracts of the type and amount let; and

WHEREAS, construction of this Project was approved by the Governing Body of the City of Santa Fe at its meeting of _____, 2014.

The OWNER and the CONTRACTOR agree:

ARTICLE 1
THE CONTRACT DOCUMENTS

The Contract Documents consist of: this Agreement, the Conditions of the Contract (General, Supplementary, and other Conditions), the Drawings, the Specifications, all Addenda issued prior to and all Modifications issued after execution of this Agreement. These documents form the Contract, and all are as fully a part of the Contract as if attached to this Agreement or repeated herein.

ARTICLE 2
THE WORK

The Contractor shall perform all the work required by the Contract Documents for the Water Division Administration Building Photovoltaic System Installation project.

The work is designated as City of Santa Fe Project, Water Division Administration Building Photovoltaic System Installation project, and consists of, but is not limited to: complete in place installation of 94.2 KW photovoltaic systems including site lighting, power improvements, and site restoration, in accordance with the drawings, specifications, and other contract documents. The location of the project is the main building for the SDCW Division located at 801 W. San Mateo Road, Santa Fe, New Mexico 87505.

The work consists of furnishing all equipment, labor and materials as required by the City of Santa Fe, New Mexico.

Contractor shall be responsible for verifications of all measurements and dimensions for bidding on each subsequent Work Order.

Contractor shall provide and keep at the work site, a complete "as-built" record set of drawings that shall be corrected daily and shall show every change from the original approved drawings and specifications. These changes shall be forwarded to City periodically. The drawings shall reflect exact and actual "as-built" conditions of construction, installation, and erection as it progresses. Where drawings are not adequate to show "as-built" conditions, Contractor shall prepare sketches which delineate the necessary "as-built" information. City shall furnish two (2) sets of all paper "blue-line" print "approved" drawings for use in accomplishing specified mark-up. Final "as-built" drawings shall be delivered to City by Contractor upon completion of the work.

The Contractor shall be responsible for maintaining traffic control at the site in conformance with the Manual on Uniform Traffic Control Devices.

Contractor shall be responsible for all permits, fees, and State and City inspections associated with the construction.

ARTICLE 3

TIME OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

The work to be performed under this Contract may commence not later than ten (10) consecutive calendar days after the date of written Notice to Proceed. Substantial Completion shall be achieved no later than One Hundred and Eighty (180) calendar days after the date of written Notice to Proceed, except as hereafter extended by valid written Change Order by the Owner. The system must be substantially complete by January 31th, 2015. Substantial completion must include interconnect and final approval of the system from PNM.

ARTICLE 4

CONTRACT SUM

The Owner shall pay the Contractor in current funds for the performance of the work, subject to additions and deductions by Change Order as provided in the Contract Documents, the Contract Sum of (_____ dollars) (\$ _____).

The Contract Sum is determined as follows:

Base Bid	\$ _____
Gross Receipts Tax (Tax Exempt)	\$ _____
Subtotal	\$ _____
TOTAL CONTRACT AMOUNT	\$ _____

ARTICLE 5

PROGRESS PAYMENTS

Based upon Application for Payment submitted to the Owner by the Contractor and Certificates for Payment issued by the Owner, the Owner shall make progress payments on account of the Contract sum to the Contractor as provided in the Contract documents for the period ending the last day of the month as follows:

Not later than twenty-one (21) days following the end of the period covered by the Application for Payment, one hundred percent (100%) of the portion of the Contract Sum properly allocable to labor, materials, and equipment incorporated in the work and one hundred percent (100%) of the portion of the Contract sum properly allocable to materials and equipment suitably stored at the site or some other location agreed upon in writing for the period covered by the Application for Payment, less the aggregate of previous payments made by the Owner; and upon substantial completion of the entire work, a sum sufficient to increase the total payments to one hundred

percent (100%) of the Contract sum, less such amounts as the Owner shall determine for all incomplete work and unsettled claims as provided in the Contract documents.

ARTICLE 6
LIQUIDATED DAMAGES

Should the Contractor neglect, refuse, or otherwise fail to achieve Substantial Completion by the contract date set forth in Article 3 herein or any extension in the Contract thereof, the Contractor agrees to pay to the Owner the amount of one thousand dollars (\$1,000) per consecutive calendar days of delay until the work is completed and accepted or until voided pursuant to the provisions of the General Conditions of the Contract, not as a penalty, but as liquidated damages for such breach of the Contract.

ARTICLE 7
FINAL PAYMENT

Final payment, constituting the entire unpaid balance of the Contract sum, shall be paid by the Owner to the Contractor within twenty-one (21) calendar days after all deficiencies to the Contract document that were noted during the Substantial Completion Inspection and listed on the attachment to the Certificate of Substantial Completion have been corrected, and provided the Contract has been fully performed and a final Certificate for Payment has been issued by the Owner. In addition, the Contractor shall provide to the Owner a certified statement of Release of Lien (AIA Document G706A or approved form), Consent of Surety, Warranty from Prime Contractor, Warranties from Suppliers and Manufacturers, training sessions, equipment/operating manuals, and as-built drawings.

ARTICLE 8
SCHEDULE

The Contractor shall, within ten (10) days after the effective date of Notice to Proceed, prepare and submit five (5) copies of a progress schedule covering project operations for the Contract period. This progress schedule shall be of the type generally referred to as a Critical Path Method (CPM), Critical Path Schedule (CPS), and Critical Path Analysis (CPA), and other similar designations. The CPM shall be used to control the timing and sequences of the project. All work shall be done in accordance with the CPM Planning and Scheduling. A written statement of explanation shall be submitted with the progress schedule. All costs incurred by the contractor to implement the CPM shall be borne by the Contractor, and are part of their Contract (See Article 4.10, Progress Schedules of Section 00700, General Conditions of the Contract).

ARTICLE 9
GENERAL AND SPECIAL PROVISIONS

9.1 This Agreement shall be governed exclusively by the provisions hereof and by the laws of the State of New Mexico as the same from time to time exist.

9.2 Terms used in this Agreement which are defined in the Conditions of the Contract shall have the meanings designated in those Conditions.

9.3 The Contractor shall defend, indemnify, and hold harmless the Owner against any and all injury, loss, or damage, including, without limitation, costs of defense, court costs and attorney's fees, arising out of the acts, errors, or omissions of the Contractor.

9.4 An enumeration of the Contractor's General Comprehensive Liability Insurance requirements appears in the General Conditions of the Contract for construction. Insurance requirements are also described in the Instructions to the Bidder section of the Project Manual. Contractor shall maintain adequate insurance in at least the maximum amounts which the Owner could be liable under the New Mexico Tort Claims Act and shall provide proof of such insurance coverage to the City. It is the sole responsibility of the Contractor to be in compliance with the law.

9.5 This Agreement shall not become effective until: (1) approved by the Governing Body; and (2) signed by all parties required to sign this Agreement.

9.6 The Contractor and the Contractor's agents and employees are independent contractors performing professional and technical services for the Owner and are not employees of the Owner. The Contractor and the Contractor's agents and employees shall not accrue leave, retirement, insurance, bonding, use of Owner's vehicles, or any other benefits afforded to employees of the Owner as a result of this Agreement.

9.7 The Contractor shall not subcontract any portion of the services to be performed under this Agreement without prior written approval of the Owner. If the Contractor is permitted to subcontract, the Contractor agrees to comply with the provisions of the Subcontractors Fair Practices Act, Section 13-4-31 through 13-4-43 NMSA 1978. Further, if permitted to subcontract, the Contractor shall comply with all provisions of the Prompt Payment Act, Sections 57-28-1 through 57-28-11 NMSA 1978.

9.8 The Contractor shall maintain detailed time records which indicate the date, time and nature of services rendered. These records shall be subject to inspection by the Owner, the Department of Finance and Administration and the State Auditor. The Owner shall have the right to audit billings both before and after payment. Payment under this Agreement shall not foreclose the right of the Owner to recover excessive illegal payments.

9.9 The terms of this Agreement are contingent upon sufficient appropriations and authorization being made by the Owner for the performance of this Agreement. If sufficient appropriations and authorization are not made by the Owner, this Agreement shall terminate upon written notice being given by the Owner to the Contractor. The Owner's decision as to whether sufficient appropriations are available shall be accepted by the Contractor and shall be final.

9.10 The Contractor warrants that the Contractor presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance or services required under this Agreement.

9.11 The Contractor hereby warrants that the Contractor is in compliance with the Americans with Disabilities Act, 29 CFR 1630.

9.12 The Contractor, upon final payment of the amounts due under this Agreement, releases the Owner, the Owner's officers and employees, and the City of Santa Fe from all liabilities and obligations arising from or under this Agreement, including, without limitation, all damages, losses, costs, liability, and expenses, including, without limitation, attorney's fees and costs of litigation that the Contractor may have.

9.21 Entire Agreement. This Agreement represents the entire Contract between the parties and except as otherwise provided herein, may not be amended, changed, modified, or altered without the written consent of the parties hereto. This Agreement incorporates all of the conditions, agreements, and understandings between the parties concerning the subject matter of this Contract, and all such conditions, understandings, and agreements have been merged into this written Agreement. No prior conditions, agreement, or understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this written Agreement.

9.22 Interchangeable Terms. For purposes of all provisions within this Agreement and all attachments hereto, the terms "Agreement" and "Contract" shall have the same meaning and shall be interchangeable.

9.23 Words and Phrases. Words, phrases, and abbreviations which have well-known technical or trade meanings used in the Contract documents shall be used according to such recognized meaning. In the event of a conflict, the more stringent meaning shall govern.

9.24 Relationship of Contract Documents. The Contract Documents are complementary, and any requirement of one Contract Document shall be as binding as if required by all.

9.25 Pursuant to Section 13-1-191, NMSA 1978, reference is hereby made to the Criminal Laws of New Mexico (including Sections 30-14-1, 30-24-2, and 30-41-1 through 30-41-3, NMSA 1978) which prohibit bribes, kickbacks, and gratuities, violation of which constitutes a felony. Further, the Procurement Code (Sections 13-1-28 through 13-1-199, NMSA 1978) imposes civil and criminal penalties for its violation.

9.26 By entering into this Agreement, the parties do not intend to create any right, title or interest in or for the benefit of any person other than the Owner and the Contractor. No person shall claim any right, title or interest under this Agreement or seek to enforce this Agreement as a third party beneficiary of this Agreement.

9.27 Pursuant to Section 13-4-11, NMSA 1978, Reference is hereby made to the Minimum Wage on Public Works; weekly payments; posting wage scale; withholding funds.

ARTICLE 10
NEW MEXICO TORT CLAIMS ACT

Any liability incurred by the City of Santa Fe in connection with this Agreement is subject to the immunities and limitations of the New Mexico Tort Claims Act, Section 41-4-1, et. seq. NMSA 1978, as amended. The City and its "public employees" as defined in the New Mexico Tort Claims Act, do not waive any limitation of liability pursuant to law. No provision in this Agreement modifies or waives any provision of the New Mexico Tort Claims Act.

This Agreement is entered into as of the day and year first written above.

OWNER:
CITY OF SANTA FE

CONTRACTOR:
(name of contractor company)

JAVIER M. GONZALES, MAYOR

NAME OF SIGNER & TITLE OF SIGNER

DATE: _____

DATE: _____

NM Taxation & Revenue CRS No. _____
City of Santa Fe Business Reg. No. _____

ATTEST:

YOLANDA Y. VIGIL
CITY CLERK

APPROVED AS TO FORM:



KELLEY A. BRENNAN, INTERIM CITY ATTORNEY 3/11/14

APPROVED:

MARCOS A. TAPIA, DIRECTOR
FINANCE DEPARTMENT

Business Unit/Line Item 52359.572970

**BONDS, CERTIFICATES, AND
NOTICES (Sample Forms)**

(SECTION 00600)

THE AMERICAN INSTITUTE OF ARCHITECTS



Bond No. _____

AIA Document A312

Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CITY OF SANTA FE

P. O. BOX 909

SANTA FE, NEW MEXICO 87504-0909

CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond:

None

See Page 6

CONTRACTOR AS PRINCIPAL

SURETY

Company:

(Corporate Seal)

Company:

(Corporate Seal)

Signature:

Name and Title:

Signature:

Name and Title:

(Any additional signatures appear on page 6)

(FOR INFORMATION ONLY — Name, Address and Telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

THE AMERICAN INSTITUTE OF ARCHITECTS



Bond No. _____

AIA Document A312

Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CITY OF SANTA FE

P. O. BOX 909

SANTA FE, NEW MEXICO 87504-0909

CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond:

None

See Page 6

CONTRACTOR AS PRINCIPAL

SURETY

Company:

(Corporate Seal) Company:

(Corporate Seal)

CONTRACTORS BONDING AND INSURANCE
COMPANY

Signature:
Name and Title

Signature:
Name and Title:

(Any additional signatures appear on page 6)

(FOR INFORMATION ONLY — Name, Address and Telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

CERTIFICATE OF INSURANCE

AIA DOCUMENT G705

This certificate is issued as a matter of information only and confers no rights upon the addressee. It does not amend, extend or alter the coverage afforded by the policies listed below.

Name and Address of Insured	COMPANIES AFFORDING COVERAGE	
	A	
	B	
	C	
	D	
	E	
Covering (Project Name and Location)	F	
Addressee: <input type="checkbox"/> (Owner) <input type="checkbox"/> L		

This is to certify that the following described policies, subject to their terms, conditions and exclusions, have been issued to the above named insured and are in force at this time.

TYPE OF INSURANCE	CO. CODE	POLICY NUMBER	EXPIRATION DATE	LIMITS OF LIABILITY IN THOUSANDS	
				EACH OCCURRENCE	AGGREGATE
1. (a) Workers' Compensation (b) Employer's Liability				Statutory	\$ - Each Accident
2. Comprehensive General Liability including: <input type="checkbox"/> Premises - Operations <input type="checkbox"/> Independent Contractors <input type="checkbox"/> Products and Completed Operations <input type="checkbox"/> Broad Form Property Damage <input type="checkbox"/> Contractual Liability <input type="checkbox"/> Explosion and Collapse Hazard <input type="checkbox"/> Underground Hazard <input type="checkbox"/> Personal Injury with Employment Exclusion Deleted				Bodily Injury	\$ -
				Property Damage	\$ -
				Bodily Injury and Property Damage Combined	\$ -
				*Applies to Products and Completed Operations Hazard	\$ - (Personal Injury)
3. Comprehensive Automobile Liability <input type="checkbox"/> Owned <input type="checkbox"/> Hired <input type="checkbox"/> Non-Owned				Bodily Injury (Each Person)	\$ -
				Bodily Injury (Each Accident)	\$ -
				Property Damage	\$ -
				Bodily Injury and Property Damage Combined	\$ -
4. Excess Liability <input type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than Umbrella				Bodily Injury and Property Damage Combined	\$ -
5. Other (Specify)					

- Products and Completed Operations coverage will be maintained for a minimum period of 1 2 year(s) after final payment.
- Has each of the above listed policies been endorsed to reflect the company's obligation to notify the addressee in the event of cancellation or non-renewal? Yes No

CERTIFICATION

I hereby certify that I am an authorized representative of each of the insurance companies listed above, and that the coverages afforded under the policies listed above will not be cancelled or allowed to expire unless thirty (30) days written notice has been given to the addressee of this certificate.

Name of Issuing Agency	Signature of Authorized Representative
Address	Date of Issue

DATE

NAME
ADDRESS
CITY/STATE/ZIP

RE:

Dear:

“OFFICIAL NOTICE-TO-PROCEED”

On _ ___, the City Manager awarded a Construction Contract to your firm for Water Division Administration Building Photovoltaic System Installation – Bid Number 14/36/B.

This letter shall serve as official Notice-to-Proceed with the work described for this project in the Contract Documents and _Request for Bids_____.

The award of the Contract is based on your Bid proposal dated _____, in the amount of \$ _____.

Based on the date of issuance of this notice, as starting date, _ ___, and the _ () contract work time limit, the entire work under this Contract shall be substantially completed by _ __.

Attached are two (2) signed copies of the Agreement between Owner and Contractor. These are for your files and Surety Company.

Please comply with the requirements for filing payroll statements with the State Labor Commission and the City Contract Compliance Officer.

Please acknowledge receipt of this notice and return signed copies to the Owner (City of Santa Fe, Capital Improvements Program) and Engineer (Dee Beingsner; dabeingsner@santafenm.gov).

Sincerely,

RECEIPT ACKNOWLEDGED:

By _____

Date

Nick Schiavo, P.E.
Acting Public Utilities and Water Division Director
Sangre De Cristo Water Division

xc: Project/Book File

GENERAL CONDITIONS OF THE CONTRACT

(SECTION 00700)

NOTICE

This document has been prepared by the Capital Improvements Program (CIP) and Contract Compliance staff of the City of Santa Fe for use in construction projects.

DOCUMENT - SECTION 00710

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

(THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES;
CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH
RESPECT TO ITS COMPLETION OR MODIFICATION.)

TABLE OF ARTICLES

1. CONTRACT DOCUMENTS	9. PAYMENTS AND COMPLETION
2. ADMINISTRATION – PUBLIC UTILITIES DEPARTMENT WATER DIVISION	10. PROTECTION OF PERSONS AND PROPERTY
3. OWNER	11. INSURANCE
4. CONTRACTOR	12. CHANGES IN THE WORK
5. SUBCONTRACTORS	13. UNCOVERING AND CORRECTION OF WORK
6. WORK BY OWNER OR BY SEPARATE CONTRACTORS	14. TERMINATION OF THE CONTRACT
7. MISCELLANEOUS PROVISIONS	15. EQUAL OPPORTUNITY
8. TIME	16. MINIMUM WAGE RATES

ARTICLE 1

CONTRACT DOCUMENTS

1.1 DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Owner-Contractor Agreement, the Conditions of the Contract (General, Supplementary, and Other Conditions), the Drawings, the Specifications, and all Addenda issued prior to and all Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a written interpretation issued by the Owner's Representative, or (4) a written order for a minor change in the work issued by the Owner's Representative. The Contract Documents do not include Bidding Documents such as the Advertisement or Invitation to Bid, the Instructions to Bidders, sample forms, the Contractor's Bid, or portions of Addenda relating to any of these, or any other documents, unless specifically enumerated in the Owner-Contractor Agreement.

1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. This Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification as defined in Subparagraph 1.1.1. The Contract Documents shall not be construed to create any contractual relationship of any kind between the Owner's Representative and the Contractor, but the Owner's Representative shall be entitled to performance of obligations intended for his benefit, and to enforcement thereof. Nothing contained in the Contract Documents shall create any contractual relationship between the Owner or the Owner's Representative and any Subcontractor or Sub-subcontractor.

1.1.3 THE WORK

The work comprises the completed construction required by the Contract Documents, and includes design specifications, and all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.

1.1.4 THE PROJECT

The Project is the total construction of which the work performed under the Contract Documents may be the whole or a part.

1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 No fewer than five (5) copies of the Contract Documents shall be signed by the Owner and the Contractor. If either the Owner or the Contractor or both do not sign the Conditions of the Contract, Drawings, Specifications, or any of the other Contract Documents, the Owner's Representative shall identify such Documents.

1.2.2 By executing the Contract, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the work is to be performed, and correlated his observations with the requirements of the Contract Documents.

1.2.3 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the work. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce the intended results. Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such

recognized meanings. In the event of a conflict between the Contract Documents, the more stringent requirements shall govern.

- 1.2.4 The organization of the Specifications into divisions, sections and articles, and the arrangement of Drawings shall not control the Contractor in dividing the work among Subcontractors or in establishing the extent of work to be performed by any trade.

ARTICLE 2

ENGINEER

2.1 DEFINITION

- 2.1.1 The Engineer is the person lawfully licensed to practice engineering, or an entity lawfully practicing engineering identified as such in the Owner-Contractor Agreement, and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term "Engineer" means the Engineer or his authorized representative.

2.2 ADMINISTRATION OF CONTRACT – SANGRE DE CRISTO WATER DIVISION

- 2.2.1 The Engineer will provide administration of the Contract as hereinafter described.
- 2.2.2 The Engineer will be the Owner's representative during construction and until final payment is due. The Engineer will advise and consult with the Owner. The Owner's instructions to the Contractor shall be forwarded through the Engineer. The Engineer shall have the authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written instrument in accordance with Subparagraph 2.2.17.
- 2.2.3 The Engineer shall submit to the Owner, for approval, a list of critical inspection points based upon the construction schedule furnished by the Contract (Paragraph 4.10.1). The Engineer and his staff (including the on-site representative, if agreed upon) shall make at least three (3) weekly visits to the site at those critical points and at other times as the Engineer deems appropriate during the progress of the work. Additionally, the Engineer shall familiarize himself with the progress and quality of the work and determine if the work is proceeding in accordance with the Contract Documents. On the basis of on-site observations, as an Engineer, he shall guard the Owner against defects and deficiencies in the construction. Should the Engineer determine that any portion of the work varies from the intent of the Contract Documents he shall immediately notify the Contractor and the Owner of the non-compliance and the nature of the work required to correct such non-compliance. The Engineer shall recommend to the Owner, in writing, to issue a "stop work order" for any portion of the work that does not substantially comply with the intent of the Contract Documents, except as follows.
- 2.2.4 The Engineer shall not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work. Additionally, the Engineer shall not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents. The Engineer shall reject work which does not meet or exceed the standards established by the Contract Documents. Whenever, in his reasonable opinion, he considers it necessary or advisable to ensure the proper implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of any work in accordance with the provisions of the Contract Documents whether or not such work be then fabricated, installed or completed.
- 2.2.5 The Engineer shall at all times have access to the work wherever it is in preparation and progress. The Contractor shall provide facilities for such access so the Engineer may perform his functions under the Contract Documents.
- 2.2.6 Based on the Engineer's observations and an evaluation of the Contractor's Application for Payment, the Engineer will determine the amounts owing to the Contractor and will issue Certificates for Payment in such amounts, as provided in Paragraph 9.4.
- 2.2.7 The Engineer will be the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder by both the Owner and the Contractor.

- 2.2.8 The Engineer will render interpretations necessary for the proper execution or progress of the work, with reasonable promptness and in accordance with any time limit agreed upon. Either party to the Contract may make written request to the Engineer for such interpretations.
- 2.2.9 Claims, disputes, and other matters in question between the Contractor and the Owner relating to the execution or progress of the work or the interpretation of the Contract Documents shall be referred to the Engineer for decision which he will render in writing within a reasonable time.
- 2.2.10 All interpretations and decisions of the Engineer shall be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. In his capacity as interpreter and judge, he will endeavor to secure faithful performance by both the Owner and the Contractor, will not show partiality to either, and will not be liable for the result of any interpretation or decision rendered in good faith in such capacity.
- 2.2.11 The Engineer's decisions in matters relating to artistic effect will be final if consistent with the intent of the Contract Documents.
- 2.2.12 The Engineer will have authority to reject work which does not conform to the Contract Documents. Whenever, in his opinion, he considers it necessary or advisable for the implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of the work in accordance with Subparagraph 7.6.2 whether or not such work be then fabricated, installed or completed. However, neither the Engineer's authority to act under this Subparagraph 2.2.12, nor any decision made by him in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any of their agents or employees, or any other person performing any of the work.
- 2.2.13 The Engineer will review and approve or take other appropriate action upon Contractor's submittals such as Shop Drawings, Product Data and samples, but only for conformance with the design concept of the work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the time is a component.
- 2.2.14 The Engineer will prepare Change Orders in accordance will Article 12 and will have authority to order minor changes in the work as provided in Subparagraph 12.3.1.
- 2.2.15 The Engineer will conduct inspections to determine the dates of Substantial Completion and Final Completion will receive and forward to the Owner for the Owner's review of written warranties and related documents required by the Contract and assembled by the Contractor and will issue a final Certificate of payment upon compliance with the requirements of Paragraph 9.9.
- 2.2.16 If the Owner and Engineer agree, the Engineer will provide one or more Project Representatives to assist the Engineer in carrying out his responsibilities at the site. The duties, responsibilities and limitations of authority of any such Project Representative shall be as set forth in an exhibit to be incorporated in the Contract Documents.
- 2.2.17 The duties, responsibilities and limitations of authority of the Engineer as the Owner's representative during construction as set for in the Contract Documents will not be modified or extended without written consent of the Owner, the Contractor and the Engineer.
- 2.2.18 In case of the termination of the employment of the Engineer, the Owner shall appoint an Engineer whose status under the Contract Documents shall be that of the former Engineer.

ARTICLE 3

OWNER

3.1 DEFINITION

3.1.1 The Owner is the person or entity identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term "Owner" means the Owner or his authorized representative.

3.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

3.2.1 The Owner shall, at the request of the Contractor, at the time of execution of the Owner-Contractor Agreement, furnish to the Contractor reasonable evidence that he has made financial arrangements to fulfill his obligations under the Contract. Unless such reasonable evidence is furnished, the Contractor is not required to execute the Owner-Contractor Agreement or to commence the work.

3.2.2 The Owner shall furnish all surveys describing the physical characteristics for the site for the Project.

3.2.3 Except as provided in Subparagraph 4.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments, and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

3.2.4 Information or services under the Owner's control shall be furnished by the Owner with reasonable promptness to avoid delay in the orderly progress of the work.

3.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, all copies of Drawings and Specifications reasonably necessary for the execution of the work.

3.2.6 The Owner shall forward all instructions to the Contractor through the Owner's Representative.

3.2.7 The foregoing are in addition to other duties and responsibilities of the Owner enumerated herein and especially those in respect to work by Owner or by Separate Contractors, Payments and Completion, and Insurance in Articles 6, 9 and 11 respectively.

3.3 OWNER'S RIGHT TO STOP THE WORK

3.3.1 If the Contractor fails to correct defective work as required by Paragraph 13.2 or persistently fails to carry out the work in accordance with the Contract Documents, the Owner, by a written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop the work, or any portion thereof, until the cause of such order has been eliminated; however, this right of the Owner to stop the work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Subparagraph 6.1.3.

3.4 OWNER'S RIGHT TO CARRY OUT THE WORK

3.4.1 If the Contractor defaults or neglects to carry out the work in accordance with the Contract Documents and fails within seven days after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, after seven days following receipt by the Contractor of an additional written notice and without prejudice to any other remedy he may have, make good such deficiencies. In such case, an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Owner's Representative's additional services made necessary by such default, neglect or failure. Such action by the Owner and the amount charged to the Contractor are both subject to the prior approval of the Owner's Representative. If the payments then or thereafter due to the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

ARTICLE 4

CONTRACTOR

4.1 DEFINITION

4.1.1 The Contractor is the person or entity identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term "Contractor" means the Contractor or his authorized representative.

4.2 REVIEW OF CONTRACT DOCUMENTS

4.2.1 The Contractor shall carefully study and compare the Contract Documents and shall at once report to the Owner's Representative any error, inconsistency or omission he may discover. The Contractor shall be liable to the Owner or the Owner's Representative for any damage resulting from any such errors, inconsistencies or omissions in the Contract Documents. The Contractor shall perform no portion of the work at any time without Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the work.

4.3 SUPERVISION AND CONSTRUCTION PROCEDURES

4.3.1 The Contractor shall supervise and direct the work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract.

4.3.2 The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors and their agents and employees, and other persons performing any of the work under a contract with the Contractor.

4.3.3 The Contractor shall not be relieved from his obligations to perform the work in accordance with the Contract Documents either by the activities or duties of the Owner's Representative in his administration of the Contract, or by inspections, tests or approvals required or performed by persons other than the Contractor.

4.4 LABOR AND MATERIALS

4.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the work, whether or not incorporated or to be incorporated in the work.

4.4.2 The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the work any unfit person or anyone not skilled in the task assigned to him.

4.5 WARRANTY

4.5.1 The Contractor warrants to the Owner and Owner's Representative that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all work will be of good quality, free from faults and conforming to these requirements. Substitutions not properly approved and authorized, may be considered defective. If required by the Owner's Representative, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions in Paragraph 13.2.

4.5.2 The Contractor shall and hereby does warrant and guarantee all workmanship, labor, and materials performed and supplied by him or his Subcontractors for a period of two (2) years from the date of completion (with the exception of the photovoltaic model, static power converter and LED fixtures as detailed below) as evidenced by the date of the Owner's Representative's Final Certificate of Payment of this Contract. This also includes all labor required for replacing materials or equipment found to be defective within the two (2) year period. All guarantees for a longer period of time required by the work sections of these Specifications shall be secured by the Contractor from

Subcontractors and delivered to the Owner's Representative and are hereby warranted by the Contractor as much as if countersigned by him.

The Contractor shall and hereby does warrant the Photovoltaic Modules for a period of 25 years to include panel replacement cost and labor. The Static Power Converter shall have a minimum warranty of 20 years. The LED Lighting fixtures shall have a minimum warranty of 5 years.

- 4.5.3 The Contractor shall and hereby does warrant and guarantee all asphalt and concrete installed for roadway and trail paving, curb and gutter, including all workmanship, labor, and materials performed and supplied by him or his Subcontractors for a period of two (2) years from the date of completion as evidenced by the date of the Owner's Representative's Final Certificate of Payment of this Contract. This also includes all labor required for replacing roadway and trail paving, curb and gutter found to be defective within the two (2) year period. All guarantees for a longer period of time required by the work sections of these Specifications shall be secured by the Contractor from Subcontractors and delivered to the Owner's Representative and are hereby warranted by the Contractor as much as if countersigned by him.

4.6 TAXES

NOT APPLICABLE

4.7 PERMITS, FEES AND NOTICES

- 4.7.1 The Contractor shall secure and pay for the building permit and for all other permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the work which are customarily secured after execution of the Contract and which are legally required at the time the Bids are received.
- 4.7.2 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the work.
- 4.7.3 It is not the responsibility of the Contractor to make certain that the Contract Documents are in accordance with applicable laws, statutes, building codes and regulations. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Owner's Representative in writing, and any necessary changes shall be accomplished by appropriate Modification.
- 4.7.4 If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner's Representative, he shall assume full responsibility therefore and shall in turn notify the Owner's Representative of such action.

4.8 ALLOWANCES

- 4.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by these allowances shall be supplied for such amounts and by these allowances shall be supplied for such amounts and by such persons as the Owner may direct, but the Contractor will not be required to employ persons against whom he makes a reasonable objection.
- 4.8.2 Unless otherwise provided in the Contract Documents:
- A. These allowances shall cover the cost to the Contractor, less any applicable trade discount of the materials and equipment required by the allowance delivered at the site, and all applicable taxes;
 - B. The Contractor's costs for unloading and handling on the site, labor, installations costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Sum and not in this allowance;
 - C. Whenever the cost is more than or less than the allowance, the Contract Sum shall be adjusted accordingly by Change Order, the amount of which will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses.

4.9 SUPERINTENDENT

- 4.9.1 The Contractor shall employ a competent Superintendent and necessary assistants who shall be in attendance at the project site during the progress of the work. The Superintendent shall represent the Contractor, and all communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be so confirmed on written request in each case.

4.10 PROGRESS SCHEDULES

- 4.10.1 The Contractor shall, within ten (10) days after the effective date of Notice to Proceed, furnish five copies of a preliminary progress schedule describing his operations for the contract period. The preliminary progress schedule shall be a bar graph or an arrow diagram showing the items the Contractor intends to commence and complete the various work stages, operations, and contract means planned to be started during the contract period.
- 4.10.2 Unless otherwise specified in the Special Provisions, the Contractor shall submit for approval by the Owner's Representative, within ten (10) days after the effective date of Notice to Proceed, traffic control plans prepared by a qualified individual for this project.
- 4.10.3 The graphic network diagram shall consist of an arrow diagram or a geometric figure and connector diagram which clearly depicts the major subdivisions of the work, the order and interdependencies of activities planned by the Contractor, as well as, activities by others which affect the Contractor's planning. The intended time for starting and completing each activity shall be shown for each construction operation. For those activities lasting more than 30 days, either the estimated time for 25-50 and 75 percent completion or other significant milestones in the course of the activity, shall be shown. In addition to the actual construction operations, the network diagram shall show such items as submittal of samples and Shop Drawings, delivery of materials and equipment, construction in the area by other forces, traffic detour controls, and other significant items related to the progress of construction. The graphic network diagram shall be printed or neatly and legibly drawn to a linear scale.
- 4.10.4 Activities shown shall be coordinated insofar as possible with the Contract Bid items, types of work and maximum number of activities of each type.
- 4.10.5 The computer printout or list of activities shall show for each activity the estimated duration, the earliest starting and finishing dates, the latest starting and finishing dates, and float or slack time. Activities which constitute the critical sequence shall be identified showing a total job duration equal to the Contract Time.
- 4.10.6 The written explanation shall contain sufficient information to describe the construction methods to be used and to enable the Owner's Representative to evaluate the schedule and supporting analysis for validity and practicability. If the schedule or written explanation is not accepted by the Owner's Representative, the Contractor shall resubmit the rejected items within ten (10) days after rejection.
- 4.10.7 The analysis may employ the use of an electric computer or may consist of a non-computer analysis if the latter is suitable to analyze the number of activities required. The adequacy of the system selected shall be acceptable to the Owner's Representative.
- 4.10.8 The Contractor shall submit to the Owner's Representative monthly progress status reports on dates directed by the Owner's Representative. Such reports shall list those uncompleted activities which have less than 30 days float and which are either in progress or scheduled to be started within the next reporting period. For each of the listed activities, the following shall be shown:
- A. Starting date scheduled in last critical-path-analysis.
 - B. Actual or intended starting date.
 - C. Revised activity duration, if any.

If the noted starting dates or duration delay the scheduled project completion date, the delay shall be named. Reasons for the delay shall be given with an explanation of the Contractor's proposed corrective action. The Contractor shall also note each activity completed during the report period.

- 4.10.9 A revised critical-path-type analysis shall be submitted when one or more of the following conditions occur:
- A. When an approved Change Order significantly affects the contract completion date, or the sequence of activities.
 - B. When progress of any critical activity falls significantly behind the scheduled progress.
 - C. When delay on a non-critical activity is of such magnitude as to change the course of the critical path.
 - D. At any time the Contractor elects to change any sequence of activities affecting the critical path.

The revised analysis shall be made in the same form and detail as the original submittal and shall be accompanied by an explanation of the reasons for the revisions.

- 4.10.10 The Contractor shall prosecute the work in accordance with the latest critical path type analysis. Deviations therefrom shall be submitted to the Owner's Representative for review. In the event that the progress of items along the critical path is delayed, the Contractor shall revise his planning to include additional forces, equipment, shifts or hours necessary to meet the Contract completion date. All additional cost resulting therefrom will not be borne by the Owner.

4.11 DOCUMENTS AND SAMPLES AT THE SITE

- 4.11.1 The Contractor shall maintain at the site, for the Owner, one record copy of all Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be available to the Owner's Representative and shall be delivered to him for the Owner upon completion of the work.

4.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- 4.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the work.
- 4.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the work.
- 4.12.3 Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the work will be judged.
- 4.12.4 The Contractor shall review, approve and submit, with reasonable promptness and in such sequence as to cause no delay in the work or in the work of the Owner or any separate Contractor, all Shop Drawings, Product Data and Samples required by the Contract Documents.
- 4.12.5 By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the work and of the Contract Documents.
- 4.12.6 The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Owner's Representative's approval of Shop Drawings, Product Data or Samples unless the Contractor has specifically informed the Owner's Representative in writing of such deviation at the time of submission and the Owner's Representative has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by the Owner's Representative's approval thereof.

- 4.12.7 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Owner's Representative on previous submittals.
- 4.12.8 No portion of the work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been approved by the Owner's Representative as provided in Subparagraph 2.2.13. All such portions of the work shall be in accordance with approved submittals.

4.13 USE OF SITE

- 4.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not reasonably encumber the site with any materials or equipment.
- 4.13.2 The Contractor shall hold and save the Owner free and harmless from liability of any nature or kind arising from use, trespass or damage occasioned by third persons.

4.14 CUTTING AND PATCHING OF WORK

- 4.14.1 The Contractor shall be responsible for all cutting, fitting, patching or grading that may be required to complete the work or to make its several parts fit together properly.
- 4.14.2 The Contractor shall not damage or endanger any portion of the work or the work of the Owner or any separate contracts by cutting, patching or otherwise altering any work, or by excavation. The Contractor shall not cut or otherwise alter the work of the Owner or any separate Contractor except with the written consent of the Owner and of such separate Contractor. The Contractor shall not unreasonably withhold from the Owner or any separate Contractor his consent to cutting or otherwise altering the work.

4.15 CLEANING UP

- 4.15.1 The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the work, he shall remove all his waste materials and rubbish from and about the Project as well as all his tools, construction equipment, machinery and surplus materials.
- 4.15.2 If the Contractor fails to clean up at the completion of the work, the Owner may do so as provided in Paragraph 3.4, and the cost thereof shall be charged to the Contractor.
- 4.15.3 The Contractor shall be solely responsible for performance of the following clean up:
 - A. Debris: Regardless of the nature of the debris, it shall be immediately cleared form the work area. Each trade shall cooperate with other trades in the removal of debris and in keeping a clean job throughout.
 - B. Cleaning of All Painted, Decorated, and Stained Work: The Contractor shall remove all marks, stains, finger prints, and other soil or dirt from all painted, decorated, and stained work.
 - C. Removal of all Temporary Protections: The Contractor shall remove all temporary protections and shall clean all floors, furnishings and structures at completion.
 - D. Removal of all Spots, Soils, and Other Contaminants for Paved Surfaces: The Contractor shall remove all spots, soil and debris from all paved surfaces and shall wash the same upon completion.
 - E. Cleaning of all Fixtures and Equipment: The Contractor shall clean all fixtures and equipment, removing all stains, paint, dirt, and dust.

4.16 COMMUNICATIONS

- 4.16.1 The Contractor shall forward all communications to the Owner through the Owner's Representative.

4.16.2 The Contractor shall designate a contact person to establish and maintain communication with all residents who will be affected by this construction. The Contractor shall contact all affected residents and businesses at least one week prior to commencing work and will provide updates at least weekly to the residents. Residents and businesses whose ingress and egress from their property will be temporarily blocked shall be given notice at least 48 hours prior to the blockage. Those residents and businesses shall be provided with a start and finish time when the blockage will occur. All access to properties will be restored each evening by 5 pm. Work on the project shall not commence before 8 am.

4.17 ROYALTIES AND PATENTS

4.17.1 The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of a patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified; but if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner's Representative.

4.18 INDEMNIFICATION

4.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and the Owner's Representative and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself), including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission by the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such negligence shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph 4.18.

4.18.2 In any and all claims against the Owner or the Owner's Representative or any of their agents or employees by an employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 4.18 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

4.18.3 The obligation of the Contractor under this Paragraph 4.18 shall not extend to the liability of the Owner's Representative, his agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs, or specifications.

ARTICLE 5

SUBCONTRACTORS

5.1 DEFINITION

5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform any of the work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative. The term "Subcontractor" does not include any separate Contractor or his Subcontractors.

5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform any of the work at the Site.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

- 5.2.1 Unless otherwise required by the Contract Documents or the Bidding Documents, the Contractor, as soon as practicable after the award of the Contract, shall furnish to the Owner and the Owner's Representative in writing the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the work. The Owner's Representative will promptly reply to the Contractor in writing stating whether or not the Owner or the Owner's Representative, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or the Owner's Representative to reply promptly shall constitute notice of no reasonable objection.
- 5.2.2 The Contractor shall not contract with any such proposed person or entity to whom the Owner or the Owner's Representative has made reasonable objection under the provisions of Subparagraph 5.2.1. The Contractor shall not be required to contract with anyone to whom he has a reasonable objection.

5.3 SUBCONTRACTUAL RELATION

- 5.3.1 By an appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Documents, assumes toward the Owner and the Owner's Representative. Said agreement shall preserve and protect the rights of the Owner and the Owner's Representative under the Contract Documents with respect to the work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Paragraph 5.3, and identify to the Subcontractor any terms and conditions of the proposed Subcontract which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Documents available to his Subcontractors.

ARTICLE 6

WORK BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

- 6.1.1 The Owner reserves the right to perform work related to the Project with his own forces, and to award separate contracts in connection with other portions of the Project or other work on the site under these or similar Conditions of the Contract. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, he shall make such claim as provided elsewhere in the Contract Documents.
- 6.1.2 When separate contracts are awarded for different portions of the Project or other work on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.
- 6.1.3 The Owner will provide for the coordination of the work of his own forces and of each separate Contractor with the work of the Contractor, who shall cooperate therewith as provided in paragraph 6.2.
- 6.1.4 The Owner will contract with a design engineer for work during this Project. The Contractor **will** plan to work around and with this other firm.

6.2 MUTUAL RESPONSIBILITY

- 6.2.1 The Contractor shall afford the Owner and the separate Contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall connect and coordinate his work with theirs as required by the Contract Documents.
- 6.2.2 If any part of the Contractor's work depends for proper execution or results upon the work of the Owner or any separate Contractor, the Contractor shall, prior to proceeding with the work, promptly report to the Owner's Representative any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acceptance of the Owner's or the separate Contractor's work as fit and proper to receive his work, except as to defects which may subsequently become apparent in such work by others.
- 6.2.3 Any costs caused by defective or ill-timed work shall be borne by the party responsible thereof.
- 6.2.4 Should the Contractor wrongfully cause damage to the work or property of the Owner, or to other work on the site, the Contractor shall promptly remedy such damage as provided in Subparagraph 10.2.5.
- 6.2.5 Should the Contractor wrongfully cause damage to the work or property of any separate Contractor, the Contractor shall upon due notice promptly attempt to settle with such other Contractor by agreement, or otherwise to resolve the dispute. If such separate Contractor sues or initiates an arbitration proceeding against the Owner on account of any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at the Contractor's expense, and if any judgment or award against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys' fees and court or arbitration costs which the Owner has incurred.

6.3 OWNER'S RIGHT TO CLEAN UP

- 6.3.1 If a dispute arises between the Contractor and separate Contractors as to their responsibility for cleaning up as required by Paragraph 4.15, the Owner may clean up and charge the cost thereof to the Contractors responsible therefore as the Owner's Representative shall determine to be just.

ARTICLE 7

MISCELLANEOUS PROVISIONS

7.1 GOVERNING LAW

- 7.1.1 The Contract shall be governed by the law of the State of New Mexico.
- 7.1.2 The Owner and the Contractor each binds himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him thereunder, without the previous written consent of the Owner.

7.2 WRITTEN NOTICE

- 7.2.1 Written notice shall be deemed to have been dully served if delivered in person to the individual or member of the firm or entity or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known to him who gives the notice.

7.3 CLAIMS FOR DAMAGES

- 7.3.1 Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the other party or of any of his employees, agents or others for whose acts he is legally liable, claim shall be made in

writing to such other party within a reasonable time after the first observance of such injury or damage.

7.4 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

7.4.1 The Contractor to whom the Contract is awarded shall furnish and pay for reputable and approved Performance and Labor and Material Payment Bonds, each for the full amount of the Contract Sum. Bonds shall be executed on standard AIA forms.

7.5 RIGHTS AND REMEDIES

7.5.1 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

7.5.2 No action or failure to act by the Owner, the Owner's Representative, or the Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

7.6 TESTS

7.6.1 This work shall consist of compaction testing, material testing, and other testing in accordance with the plans and specifications. If the Contract Document, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any portion of the work to be inspected, tested or approved, the Contractor shall give the Owner's Representative timely notice of its readiness so the Owner's Representative may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, tests or approvals. Tests specifically called for by specifications shall be made by a professional testing laboratory acceptable to the Owner's Representative, and the Contractor shall employ same and pay all charges in connection therewith. Records of tests shall be delivered to the Owner's Representative in duplicate on acceptable forms.

7.6.2 If the Owner's Representative determines that any work requires special inspection, testing, or approval which Subparagraph 7.6.1 does not include, he will, upon written authorization from the Owner, instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give notice as provided in Subparagraph 7.6.1. If such special inspection or testing reveals a failure of the work to comply with the requirements of the Contract Documents, the Contractor shall bear all costs thereof, including compensation for the Owner's Representative's additional services made necessary by such failure; otherwise the Owner shall bear such costs, and an appropriate Change Order shall be issued.

7.7 INTEREST

7.7.1 The Owner will not pay interest on payments due and unpaid under the Contract Documents.

ARTICLE 8

TIME

8.1 DEFINITIONS

8.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents for Substantial Completion of the work as defined in Subparagraph 8.1.3, including authorized adjustments thereto.

8.1.2 The date of commencement of the work is the date established in a Notice to Proceed. If there is no Notice to Proceed, it shall be the date of the Owner-Contractor Agreement or such other date as may be established therein.

8.1.3 The date of Substantial Completion of the work or designated portion thereof is the date certified by the Owner's Representative and approved by the Owner when construction is sufficiently complete, in accordance with the

Contract Documents, so the Owner can occupy or utilize the work or designated portion thereof for the use for which it is intended.

8.1.4 The term "day" as used in the Contract Document shall mean calendar day unless otherwise specifically designated.

8.2 PROGRESS AND COMPLETION

8.2.1 All time limits stated in the Contract Documents are the essence of the Contract.

8.2.2 The Contractor shall begin the work on the date of commencement as defined in Subparagraph 8.1.2. He shall carry the work forward expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in the progress of the work by any act or neglect of the Owner or the Owner's Representative or by any employees of either, or by any separate Contractor employed by the Owner or by changes ordered in the work, or by labor disputes, fire, unusual delay in unavoidable casualties, or any causes beyond the Contractor's control or by delay authorized by the Owner pending arbitration, or by any other cause which the Owner's Representative determines may justify the delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Owner's Representative may determine.

8.3.2 Any claim for extension of time shall be made in writing to the Owner's Representative not more than twenty days after the commencement of the delay; otherwise it shall be waived. In the case of a continuing delay, only one claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the work.

8.3.3 If written agreement is made stating the dates upon which interpretations shall be furnished, then no claim for delay shall be allowed on account of failure to furnish such interpretations until fifteen days after written request is made for them, and not then unless such claim is reasonable.

8.3.4 This Paragraph 8.3 does not exclude the recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9

PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Owner-Contractor Agreement and including authorized adjustments thereto, is the total amount payable by the Owner to the Contractor for the performance of the work under the Contract Documents.

9.2 SCHEDULE OF VALUES

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Owner's Representative a schedule of values allocated to the various portions of the work, prepared in such form and supported by such data to substantiate its accuracy as the Owner's Representative may require. This schedule, unless objected to by the Owner's Representative, shall be used only as a basis for the Contractor's Applications for payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 At least ten days before the date for each progress payment established in the Owner-Contractor Agreement, the Contractor shall submit to the Owner's Representative an itemized Application for Payment, notarized if required,

supported by such data substantiating the Contractor's right to payment as the Owner or the Owner's Representative may require and reflecting retainage, if any, as provided elsewhere in the Contract Documents. On the Owner's Representative's recommendation, and after the Project is 50% or more complete, and if the Project is on schedule, the retainage may be reduced with the approval of the Owner. The full Contract retainage may be reinstated if the manner of completion of the work and its progress do not remain satisfactory to the Owner's Representative and the Owner.

- 9.3.2 Unless otherwise provided in the Contract Documents, payments will be made on account of materials or equipment not incorporated in the work but delivered and suitably stored at the site; and, if approved in advance by the Owner payments may similarly be made for materials or equipment suitably stored at some other location agreed upon in writing. Payments for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest, including applicable insurance and transportation to the site for those materials and equipment stored off the site.
- 9.3.3 The Contractor warrants that title to all work, materials and equipment covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interest or encumbrances hereinafter referred to in this Article 9 as "liens"; and that no work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing work at the site or furnishing materials or equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

9.4 CERTIFICATES FOR PAYMENT

- 9.4.1 The Owner's Representative will, within seven days after the receipt of the Contractor's Application for Payment, either issue a Certificate for Payment to the Owner with a copy to the Contractor for such amount as the Owner's Representative determines is properly due, or notify the Contractor in writing of his reasons for withholding a Certificate as provided in Subparagraph 9.6.1.
- 9.4.2 The issuance of Certificate for Payment will constitute a representation by the Owner's Representative to the Owner, based on his observations at the site and the data comprising the Application for Payment, that the work has progressed to the point indicated; that, to the best of his knowledge, information and belief, the quality of the work is in accordance with the Contract Documents (subject to an evaluation of the work for conformance with the Contract Documents upon Substantial Completion, to the results of any subsequent tests required by or performed under the Contract Documents correctable prior to completion, and to any specific qualifications stated in his Certificate); and that the Contractor is entitled to payment in the amount certified. However, by issuing a Certificate for Payment, the Owner's Representative shall not thereby be deemed to represent that he has made exhaustive or continuous on-site inspections to check the quality or quantity of the work or that he has reviewed the construction means, methods, techniques, sequences or procedures, or that he has made any examination to ascertain how or for what purpose the Contractor has used the moneys previously paid on account of the Contract Sum.

9.5 PROGRESS PAYMENTS

- 9.5.1 After the Owner's Representative has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents.
- 9.5.2 The Contractor shall promptly pay each Subcontractor upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's work, the amount to which said Subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such Subcontractor's work. The Contractor shall, by an appropriate agreement with each Subcontractor, require each Subcontractor to make payment to his Subcontractors in similar manner.
- 9.5.3 The Owner's Representative may, on request and at his discretion, furnish to any Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor and the action

taken thereon by the Owner's Representative on account of work done by such Subcontractor.

- 9.5.4 Neither the Owner nor the Owner's Representative shall have any obligation to pay or to see to the payment of any moneys to any Subcontractor except as may otherwise be required by law.
- 9.5.5 No Certificate for progress payment, no progress payment, nor any partial or entire use of occupancy of the Project by the Owner shall constitute an acceptance of any work not in accordance with the Contract Documents.

9.6 PAYMENT WITHHELD

- 9.6.1 The Owner's Representative may decline to certify payment and may withhold his Certificate in whole or in part, to the extent necessary to reasonably protect the Owner, if in his opinion he is unable to make representations to the Owner as provided in Subparagraph 9.4.2.
- 9.6.2 If the Owner's Representative is unable to make representations to the Owner, as provided in Subparagraph 9.4.2 and to certify payment in the amount of the Application, he will notify the Contractor as provided in Subparagraph 9.4.1. If the Contractor and Owner's Representative cannot agree on a revised amount, the Owner's Representative will promptly issue a Certificate for Payment for the amount for which he is able to make such representations to the Owner. The Owner's Representative may also decline to certify payment, or because of subsequently discovered evidence or subsequent observations, he may nullify the whole or any part of any Certificate for Payment previously issued, to such extent as may be necessary in his opinion to protect the Owner from loss because of:
- A) Defective work not remedied;
 - B) Third party claims filed or reasonable evidence indicating probable filing of such claims;
 - C) Failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
 - D) Reasonable evidence that the work cannot be completed for the unpaid balance of the Contract Sum;
 - E) Damage to the work of another Contractor;
 - F) Reasonable evidence that the work will not be completed within the Contract Time; or,
 - G) Failure to carry out the work in accordance with the Contract Documents.
- 9.6.2 When the above grounds in Subparagraph 9.6.1 are removed or remedied, payment shall be made for amounts withheld because of them.

9.7 FAILURE OF PAYMENT

- 9.7.1 If the Owner's Representative does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents any amount certified by the Owner's Representative, then the Contractor may, upon seven additional days' written notice to the Owner and the Owner's Representative, stop the work until payment of the amount owing has been received. The Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, which shall be effected by appropriate Change Order in accordance with Paragraph 12.3.

9.8 SUBSTANTIAL COMPLETION

- 9.8.1 When the Contractor considers that the work, or a designated portion thereof which is acceptable to the Owner, is substantially complete as defined in Subparagraph 8.1.3, the Contractor shall prepare for submission to the Owner's Representative a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents. When

the Owner's Representative, with the Owner, on the basis of an inspection determines that the work or designated portion thereof is substantially complete, he will then prepare a Certificate of Substantial Completion Form, AIA Document G704-1978, which shall establish the Date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for security and maintenance, and the time within which the Contractor shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the date of Final Completion of the work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Contractor and the Owner for their written acceptance of the responsibilities assigned to them in such Certificate.

- 9.8.2 Upon Substantial Completion of the work or designated portion thereof and upon application by the Contractor and certification by the Owner's Representative, the Owner shall make payment, reflecting adjustment in retainage, if any, for such work or portion thereof, as provided in the Contract Documents.

9.9 FINAL COMPLETION AND FINAL PAYMENT

- 9.9.1 Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Owner's Representative will promptly make such inspection and, if he finds the work acceptable under the Contract Documents and the Contract fully performed, he will promptly issue final Certificate for Payment stating that, to the best of his observations and inspections, the work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in said Final Certificate, is due and payable. The Owner's Representative's Final Certificate of payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Subparagraph 9.9.2 have been fulfilled.
- 9.9.2 Neither the final payment nor the remaining retained percentage shall become due until the Contractor submits to the Owner's Representative (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Owner or his property might in any way be responsible have been paid or otherwise satisfied, (2) consent of surety, if any, to final payment, and (3) if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designed by the Owner. If any Subcontractor refuses to furnish a release or waiver required by the Owner the Contractor may furnish a bond satisfactory to the Owner to indemnify him against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.
- 9.9.3 If, after Substantial Completion of the work, final completion thereof is materially delayed through no fault of the Contractor or by the issuance of Change Orders affecting final completion, and the Owner's Representative so confirms, the Owner shall, upon application by the Contractor and certification by the Owner's Representative and without terminating the Contract, make payment of the balance for that portion of the work fully completed and accepted. If the remaining balance for work not fully completed or corrected is less than the retainage stipulated in the Contract Document, and if bonds have been furnished as provided in Paragraph 7.4, the written consent of the surety to the payment of the balance due for that portion of the work fully completed and accepted shall be submitted by the Contractor to the Owner's Representative prior to certification of such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.
- 9.9.4 The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:
- A) Unsettled liens;
 - B) Faulty or defective work appearing after Substantial Completion;
 - C) Failure of the work to comply with the requirements of the Contract Documents; and
 - D) Terms of any special warranties required by the Contract Documents.
- 9.9.5 The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be responsible in initiating, maintaining and supervising all safety precautions and programs in connection with the work.

10.2. SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

10.2.1.1 All employees on the work and all other persons who may be affected thereby;

10.2.1.2 All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his Subcontractors or Sub-subcontractors; and

10.2.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

10.2.4 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy all damage or loss (other than damage or loss insured under paragraph 11.3) to any property referred to in Clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and for which the Contractor is responsible under clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to the acts or omissions of the Owner or the Owner's Representative or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to his obligations under Paragraph 4.18.

10.2.6 The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated by the Contractor in writing to the Owner and the Owner's Representative.

10.2.7 The Contractor shall not load or permit any part of the work to be loaded so as to endanger its safety.

10.3 EMERGENCIES

10.3.1 In any emergency affecting the safety of persons or property, the Contractor shall act, at his reasonable discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in Article 12 for changes in the work.

ARTICLE 11

INSURANCE

11.1 CONTRACTOR’S LIABILITY INSURANCE

- 11.1.1. The Contractor shall carry insurance to protect the City of Santa Fe from and against all claims, demands, actions, judgments, costs, expenses and liabilities which may arise or result directly or indirectly from or by reasons of loss, injury or damage related to the Project. The Contractor shall file with the City of Santa Fe current certificates evidencing public liability insurance with limits as provided in the New Mexico Tort Claims Act, Section 41-4-19 NMSA 1978, and as that section or successors section may be amended from time to time. The contractor shall also carry such insurance as it deems necessary to protect it from all claims under any workmen's compensation law in effect that may be applicable to the Contractor. All insurance required by this Agreement shall be kept and remain in full force and effect for the entire life of this Agreement.
- 11.1.2. The insurance coverage shall include worker's compensation, employers liability, comprehensive general liability (Premises-Operations, independent contractors, products and completed operations, broad form property damage, contractual liability, explosion and collapse hazard, underground Hazard, personal injury) comprehensive automobile liability (owned and hired), excess liability (umbrella form), and all-risk builder's risk.
- 11.1.3. All insurance coverage must be maintained for the entire life of the Project. Products and completed operations coverage shall be maintained for a minimum period of one (1) year after final payment.
- 11.1.4. A valid certificate of insurance must be submitted to the Owner prior to issuance of a Notice-to-Proceed.

Type of Required Coverage	Minimum Limits of Liability
Workman’s compensation (including accident and occupational disease coverage)	Statutory
Employer’s Liability	\$100,000
Comprehensive General Liability (including endorsements providing broad form property damage coverage, personal injury coverage, and contractual assumption of liability coverage for all liability the Contractor has assumed under his Contract).	Bodily injury liability: \$500,000 each occurrence; \$1,000,000 aggregate. Property damage liability: \$500,000 each occurrence; \$1,000,000 aggregate.
Auto Liability (including non-owned auto coverage)	Bodily injury liability: \$500,000 each person; \$1,000,000 each occurrence. Property damage liability: \$1,000,000 each occurrence

- 11.1.5 Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the work. These Certificates shall contain a provision that coverage afforded under the policies will not be canceled until at least thirty days prior written notice has been given to the Owner. The Contractor shall furnish one (1) copy of each of the Certificates of insurance herein required for each copy of the Contract.

11.2 OWNER’S LIABILITY INSURANCE

- 11.2.1 The Owner shall be responsible for purchasing and maintaining his own liability insurance and, at his option, may purchase and maintain such insurance as will protect him against all claims which may arise from operations under the Contract.

11.3 PROPERTY INSURANCE

- 11.3.1 The Contractor shall maintain traditional course of construction insurance upon the work at the site for at least the

actual cash value thereof. The traditional course of construction insurance shall cover the interests of the Owner, the Contractor, Subcontractors, and Sub-subcontractors in the work. The insurance shall insure against at least the following perils: fire extended coverage, vandalism, malicious mischief, and flood insurance with a deductible of no more than \$25,000. The Contractor shall bear the cost of such insurance and include its cost in the Bid.

- 11.3.2 Any loss insured under Subparagraph 11.3.1 is to be adjusted with the Owner and made payable to the Owner as trustee for the insured, as their interests may appear subject to the requirements of any applicable mortgage clause. The Owner shall deposit the proceeds in a separate account and shall distribute them in accordance with such agreement as the parties in interest, including the Owner, may reach. The Contractor shall pay each Subcontractor a just share of any insurance proceeds which the Contractor receives and shall require by written agreement signed by the Subcontractor that the Subcontractor will make payments to his Sub-subcontractors in a similar manner. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate order.
- 11.3.3 To the extent permitted under their respective property insurance policies, the Owner and the Contractor hereby waive all rights, each against the other, for damages caused by fire or other perils to the extent covered by Insurance obtained pursuant to this Article 11 or any other property insurance applicable to the work, except such rights as they may have to the proceeds of such Insurance held by the Owner as trustee. The Owner or the Contractor, as appropriate, shall require the Owner's Representative, other Contractors, Subcontractors, and Sub-subcontractors to similarly waive rights of subrogation or property insurers.
- 11.3.4 If the Owner finds it necessary to occupy use of any portion of the work prior to Substantial Completion, such occupancy or use shall not commence prior to the time mutually agreed to by the Owner and the Contractor and, if required by the applicable insurance or self insurance coverage not prior to the time the builder's risk property insurer has consented to such occupancy or use. The Contractor's consent to such occupancy or use shall not be unreasonably withheld.

11.4 LOSS OF USE INSURANCE

- 11.4.1 The Owner, at his option, may purchase and maintain such insurance as will insure him against loss of use of his property due to fire or other hazards, however caused.

ARTICLE 12

CHANGES IN THE WORK

12.1 CHANGE ORDERS

- 12.1.1 A Change Order is a written order to the Contractor signed by the Owner's Representative and the Contractor and approved in writing by the Owner. A Change Order may be issued only after the execution of the Contract and shall be the only means used to order changes in the work for which the Contractor requires additional compensation, changes to the Contract Time, or changes to the Contract Sum. Minor changes in the work for which the Contractor requires no additional compensation or time shall be executed in accordance with the provision of Subparagraph 12.3.1.
- 12.1.2 The Owner, without invalidating the Contract, may order changes in the work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the work shall be authorized by Change Order and shall be performed under the applicable conditions of the Contract Documents.
- 12.1.3 The cost or credit to the Owner resulting from a change in the work shall be determined in one or more of the following ways:
- A) By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

- B) By unit prices stated in the Contract Documents or subsequently agreed upon;
- C) By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- D) By the method provided in Subparagraph 12.1.4.

12.1.4 If none of the methods set forth in Clauses 12.1.2 or 12.1.3 is agreed upon, the Contractor, provided he receives a written order signed by the Owner, shall promptly proceed with the work involved. The cost of such work shall be determined by the Owner's Representative on the basis of the reasonable expenditures and savings of those performing the work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, the Contractor shall keep and present, in such form as the Owner's Representative may prescribe, an itemized accounting together with appropriate supporting data for inclusion in a Change Order. Unless otherwise provided in the Contract Documents, cost shall be limited to the following: cost of materials, including sales tax and cost of delivery; cost of labor, including social security, old age and unemployment insurance, and fringe benefits, required by agreement or custom, workers' or workmen's compensation insurance; bond premiums; rental value of equipment and machinery; and the additional costs of supervision and field office personnel directly attributable to the change. Pending final determination of cost to the Owner payments on account shall be made on the Owner's Representative's Certificate for payment. The amount of credit to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in the Contract Sum will be the amount of the actual net cost as confirmed by the Owner's Representative. When both additions and credits covering related work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.

12.1.5 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a proposed Change Order that application of the agreed unit prices to the quantities of work proposed will cause substantial inequity to the Owner or the Contractor, the applicable unit prices shall be equitably adjusted.

12.1.6 By submission of a Bid, the Contractor agrees and binds himself to the following method of calculating Change Order costs. The Owner also agrees to the following method of calculating the cost of any changes to the Contract. With each proposal for a change in the amount of the Contract, the Contractor shall submit an itemized breakdown of all increases or decreases in the cost of the Contractor's and all Subcontractor's and Sub-subcontractor's work to include at least the following detail in the general order listed:

- A) Material quantities and unit costs;
- B) Labor amounts and hourly rates (identified with specific items of material to be placed or operation to be performed);
- C) Costs inherent in use of Contractor/Sub-subcontractor owned equipment;
- D) Equipment rental, if any;
- E) Workmen's compensation and public liability insurance;
- F) General administration, overhead, supervision, project insurance and profit, based on the following schedule:

<u>Subtotal before Applying the Percentage Shown</u>	<u>\$500 & Less</u>	<u>Over \$500</u>
Contractor for work performed by his own forces	22%	19%
Contractor for work performed by Subcontractor	10%	8%
Subcontractor for work performed by his own forces	18%	15%
Subcontractor for work performed by Sub-subcontractor	10%	8%

- | | | | |
|----|--|-----|-----|
| | Sub-subcontractor for work performed by his own forces | 18% | 15% |
| G) | Employment taxes under FICA and FUTA; and | | |
| H) | State gross receipts tax (Contractor only). | | |

12.1.7 The quotation for work under a Change Order shall be binding for sixty (60) days from the date submitted by the Contractor.

12.2 CONCEALED CONDITIONS

12.2.1 Should concealed conditions encountered in the performance of the work below the surface of the ground or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the Contract Documents, or should unknown physical conditions below the surface of the ground or should concealed or unknown conditions in an existing structure of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the Character provided for in this Contract, be encountered, the Contract Sum shall be equitably adjusted by Change Order upon verified claim by either party made within twenty days after the first observance of the conditions.

12.2.2 If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give the Owner's Representative written notice thereof within twenty days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the work, except in an emergency endangering life or property, in which case the Contractor shall proceed in accordance with Paragraph 10.3. No such claim shall be valid unless so made. If such claims are justified and the Owner authorizes an increase in the Contract Sum, the Owner and the Contractor shall proceed to negotiate the amount of the adjustment in the Contract Sum. If the Owner and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined by the Owner's Representative. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

12.2.3 If the Contractor claims that additional cost is involved because of, but not limited to, (1) any written interpretation, (2) any order by the Owner to stop the work pursuant to Paragraph 3.3 where the Contractor was not at fault, (3) any written order for a minor change in the work issued pursuant to Paragraph 12.3.1 or (4) failure of payment by the Owner pursuant to Paragraph 9.7, the Contractor shall make such claims as provided in Subparagraph 12.2.2.

12.3 MINOR CHANGES IN THE WORK

12.3.1 The Owner's Representative will have authority to order minor changes in the work not involving an adjustment in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and the Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 13

UNCOVERING AND CORRECTION OF WORK

13.1 UNCOVERING OF WORK

13.1.1 If any portion of the work should be covered contrary to the request of the Owner's Representative or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Owner's Representative, be uncovered for his observation and shall be replaced at the Contractor's expense.

13.1.2 If any portion of the work has been covered which the Owner's Representative has not specifically requested to observe prior to being covered, the Owner's Representative may request to see such work and it shall be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the cost of uncovering

and replacement shall, by appropriate Change Order, be charged to the Owner. If such work is found to be not in accordance with the Contract Documents, the Contractor shall pay such costs unless it is found that this condition was caused by the Owner or a separate Contractor as provided in Article 6, in which case the Owner shall be responsible for the payment of such costs.

13.2 CORRECTION OF WORK

- 13.2.1 The Contractor shall promptly correct all work rejected by the Owner's Representative as defective or as failing to conform to the Contract Documents whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected work, including compensation for the Owner's Representative's additional services made necessary thereby.
- 13.2.2 If, within one year after the Date of Substantial Completion of the work or designated portion thereof or within one year after acceptance by the Owner of designated equipment or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so unless the Owner has previously given the Contractor a specific written acceptance of such condition. This obligation shall survive termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.
- 13.2.3 The Contractor shall remove from the site all portions of the work which are defective or non-conforming and which have not been corrected under Subparagraphs 4.5, 13.2.1 and 13.2.2, unless removal is specifically waived in writing by the Owner.
- 13.2.4 If the Contractor fails to correct defective or non-conforming work as provided in Subparagraph 4.5.1, 13.2.1 and 13.2.2, the Owner may correct it in accordance with Paragraph 3.4.
- 13.2.5 If the Contractor does not proceed with the correction of such defective or non-conforming work within a reasonable time fixed by written notice from the Owner's Representative, the Owner may remove it and may store the materials or equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten days thereafter, the Owner may upon ten additional days' written notice sell such work at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs that should have been borne by the Contractor including compensation for the Owner's Representative's additional services made necessary thereby. If such proceeds of sale do not cover all costs which the Contractor should have borne, the difference shall be charged to the Contractor and an appropriate Change Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.
- 13.2.6 The Contractor shall bear the cost of making good all work of the Owner or separate Contractors destroyed or damaged by such correction or removal.
- 13.2.7 Nothing contained in this Paragraph 13.2 shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents, including Paragraph 4.5 hereof. The establishment of the time period of one year after the Date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Contract Documents relates only to the Contractor to correct the work and has no relationship to the time within which his obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to his obligations other than specifically to correct the work.

13.3 ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK

- 13.3.1 If the Owner prefers to accept defective or non-conforming work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect a reduction in the Contract Sum where appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 14

TERMINATION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1 If the work is stopped for a period of thirty days under an order of court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Sub-contractor or their agents or employees or any other persons performing any of the work under a contract with the Contractor, or because the Owner's Representative has not issued a Certificate for payment as provided in Paragraph 9.7, or because the Owner has not made payment thereon as provided in paragraph 9.7, then the Contractor may, upon seven additional days' written notice to the Owner and the Owner's Representative, terminate the Contract and recover from the Owner payment for all work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and damages.

14.2 TERMINATION BY THE OWNER

- 14.2.1 If the Contractor is adjudged bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency, or if he persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he fails to make prompt payment to Subcontractors for material or labor, or persistently disregards laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, then the Owner, upon certification by the Owner's Representative that sufficient cause exists to justify such action, may without prejudice to any right or remedy and after giving the Contractor and his surety, if any, seven days written notice, terminate the employment of the Contractor and take possession of the site and of all material, tools, construction equipment and machinery thereon owned by the Contractor and may finish the work by whatever method he may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished.
- 14.2.2 If the unpaid balance of the Contract Sum exceeds the costs of finishing the work, including compensation for the Owner's Representative's additional services made necessary thereby, and any damages sustained by the Owner as a result of the Contractor's breach, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or to the Owner, as the case may be, shall be certified by the Owner's Representative upon application, in the manner provided in paragraph 9.4 and this obligation to the Contractor or to the Owner, as the case may be, shall be certified by the Owner's Representative upon application, in the manner provided in Paragraph 9.4 and this obligation for payment shall survive the termination of the Contract.
- 14.2.3 In the event that the Project is abandoned by the Owner, the Owner may terminate this contract at any time by giving at least seven (7) days notice to the Contractor. In the event of termination, all work completed shall become the property of the Owner. The Contractor shall be entitled to receive compensation for actual work satisfactorily completed hereunder, including reimbursable expense authorized by the Owner which are then due.
- 14.2.4 In the event the Contractor fails to perform the work in accordance with the Contract Documents, the Owner may terminate the Contract after giving the Contractor five (5) working days notice.

ARTICLE 15

EQUAL OPPORTUNITY

15.1 The Contractor shall maintain policies of employment as follows:

15.1.1 The Contractor, all Subcontractors, and all Sub-subcontractors shall not discriminate against any employee or

applicant for employment because of race, religion, color, sex or national origin. The Contractor shall take affirmative action to ensure that applicants are employed and that employees are treated without discrimination during employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous place, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

- 15.1.2 The Contractor, all Subcontractors, and all Sub-subcontractors shall, in all solicitation or advertisements for employees placed by them or on their behalf, state that all qualified applicant will receive consideration for employment without regard to race, religion, color, sex, or national origin.

ARTICLE 16

MINIMUM WAGE RATES

- 16.1 The project is subject to *New Mexico Wage Decision # SF-14-0364 B* and the City of Santa Fe's Minimum Wage Ordinance both attached.

SUPPLEMENTARY CONDITIONS

(SECTION 00800)

SUPPLEMENTARY CONDITIONS (SECTION 00800)

SUPPLEMENTARY CONDITIONS

This document is intended to be used in conjunction with the General Conditions of the Contract.

ADDITIONAL CONDITIONS

- 1.0 DEFINITIONS - The following definitions shall apply through the Bidding Documents or Contract Documents unless otherwise specified.
 - 1.1 ADDENDUM: Written or graphic instrument issued prior to the execution of the Contract which modifies or interprets the Bidding Documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed. Plural: ADDENDA
 - 1.2 ADDITIVE OR DEDUCTIVE ALTERNATE BID: Amount stated in the Bid to be added or deducted from the amount of the Base Bid if the corresponding change in project scope or alternate materials and/or methods of construction is accepted.
 - 1.3 BASE BID: Amount of money stated in the Bid as the sum for which the Bidder offers to perform the work, not including that work for which Alternate Bids are also submitted.
 - 1.4 BID: A complete and properly signed proposal to do the work or designated portion thereof for the sums stipulated therein, supported by data called for by the Bidding Documents.
 - 1.5 BID LOT: A major item of work for which a separate quotation or proposal is requested.
 - 1.6 BIDDER: One who submits a Bid for a prime contract with the Owner, as distinct from a Subcontractor, who submits a Bid to a Bidder. Technically, a Bidder is not a Contractor on a specific project until a contract exists between him and the Owner.
 - 1.7 BIDDING DOCUMENTS: Documents that include the Invitation for Bid, Instructions to Bidders, the Bid Form, other sample bidding and contract forms, and the proposed Contract Documents, including any Addenda issued prior to receipt of Bids. The Contract Documents proposed for the work consist of the Owner-Contractor Agreement, the Conditions of the Construction Contract (General, Supplementary, and Other Conditions), the Drawings, the Specifications, and all Addenda issued prior to and all Modifications issued after execution of the Contract.
 - 1.8 DAY: Calendar day, which is every day shown on the calendar, beginning and ending at midnight.
 - 1.9 CENTRAL PURCHASING OFFICE: The Central Purchasing Office is the City of Santa Fe Purchasing Department.
 - 1.10 GOVERNING AUTHORITY: The Governing Authority of the City of Santa Fe for the execution of construction contracts is the Mayor and City Manager.
 - 1.11 INVITATION FOR BID: The Bidding Documents utilized for soliciting sealed Bids. "Invitation to Bid" shall have the same meaning as "Invitation for Bid".
 - 1.12 OWNER: The City of Santa Fe, New Mexico.
 - 1.13 PROCUREMENT OFFICER: The Director of the Purchasing Division, or a designee authorized to enter into or administer contracts and make written determination with respect thereto.
 - 1.14 RESPONSIBLE BIDDER: A Bidder who submits a responsive Bid and who has furnished, when required,

information and data to prove that his financial resources, production or service facilities, personnel, service reputation, and experience are adequate to make satisfactory delivery of the services, construction, or items of tangible personal property described in the Bidding Documents (13-1-82, NMSA 1978).

- 1.15 **SUCCESSFUL BIDDER:** The lowest qualified and responsible Bidder to whom the Owner, on the basis of the Owner's evaluation, makes an award.
- 1.16 **UNIT PRICES:** Amounts stated in the Contract as prices per unit of measurement for materials or services as described in the Contract Documents.
- 1.17 **USER:** The City of Santa Fe or agencies or designated entity for whose use the Project is being constructed.

2.0 CONTRACT AUDIT

The Owner shall be entitled to audit the books and records of a Contractor or any Subcontractor under any negotiated contract or subcontract other than a firm fixed-price contract to the extent that such books and records relate to the performance of such contract or subcontract. Such books and records shall be maintained by the Contractor for a period of three years from the date of final payment under the prime contract and by the Subcontractor for a period of three years from the date of final payment under the subcontract unless a shorter period is otherwise authorized in writing (13-1-161, NMSA 1978).

3.0 DEBARRED OR SUSPENDED CONTRACTORS

A business (Contractor, Subcontractor, or Supplier) that has either been debarred or suspended pursuant to the requirements of Sections 13-1-177 through 13-1-180, and 13-4-11 through 13-4-17, NMSA 1978, or City Purchasing provisions shall not be permitted to do business with the City and shall not be considered for award of contract during the period for which it is debarred or suspended.

4.0 BRIBES, GRATUITIES, AND KICK-BACKS

- 4.1 It is illegal in the State of New Mexico for any public employee to solicit or accept anything of value in connection with award of this Bid and for any person to offer or pay anything of value to any such public employee (30-24-1 through 30-24-2, NMSA 1978).
- 4.2 Pursuant to Section 13-1-191, NMSA 1978, reference is hereby made to the Criminal Laws of New Mexico (including 30-24-1, 30-23-2, and 30-41-1 through 3-41-3, NMSA 1978), which prohibit bribes, kick-backs, and gratuities and violation of which constitutes a felon. Further, the Procurement Code (13-1-28 through 13-1-199, NMSA 1978), imposes civil and criminal penalties for its violation

5.0 PROTESTS (CITY PURCHASING MANUAL)

- 5.1 Any Contractor who is aggrieved in connection with a procurement may protest to the City Purchasing Agent and the Owner. The protest should be made in writing within twenty-four (24) hours after the facts or occurrences; giving rise thereto, but in no case, not more than fifteen (15) calendar days after the facts or occurrences giving rise thereto.
- 5.2 In the event of a timely protest under the City Purchasing Manual, the City Purchasing Agent and the Owner shall not proceed further with the procurement unless the City Purchasing Agent or the Owner makes a determination that the award of contract is necessary to protect substantial interests of the Owner.
- 5.3 The City Purchasing Agent or his designee shall have the authority to take any action reasonably necessary to resolve a protest of an aggrieved Contractor concerning a procurement.
- 5.4 This authority shall be exercised in accordance with adopted regulations, but shall not include the authority to award money damages or attorneys' fees.

- 5.5 The City Purchasing Agent or his designee shall promptly issue a determination relating to the protest. The determination shall:
- A) State the reasons for the action taken; and,
 - B) Inform the protestant of the right to judicial review of the determination pursuant to the City Purchasing Manual.
- 5.6 A copy of the determination issued under the City Purchasing Manual shall be mailed to the protestant.

6.0 CONTRACT BOND REQUIREMENTS

- 6.1 The Successful Bidder, where the Contract Price exceeds twenty five thousand dollars (\$25,000), shall post a one hundred percent (100%) Performance Bond and a one hundred percent (100%) Labor and Material Payment Bond. Bonds shall be executed on Performance Bond and Labor and Material Payment Bond forms attached hereto, with amount payable conforming to the terms of the Contract. Surety shall be a company licensed to do business in the State of New Mexico and acceptable to the Owner.
- 6.2 Personal sureties may be accepted if the Owner so determines in advance, but in such case the amount of the Bond shall be the full Contract Price, and the sureties shall justify under oath in amounts above liabilities and exemptions aggregating double the amount of the Bond.
- 6.3 Special attention of Bidders is called to the requirements of Section 13-4-18 through 13-4-20, NMSA 1978 regarding a Contractor who does not have his principal place of business in the State of New Mexico for all taxes due arising out of construction services rendered under the Contract.
- 6.3.1 The right to sue on this Bond accrues only to the Owner and the parties to whom Sections 13-4-18 through 13-4-20, NMSA 1978 grant such right; and any such right shall be exercised only in accordance with the provisions and limitations of said statutes.

7.0 NON-RESIDENT CONTRACTOR'S REQUIREMENTS REGARDING GROSS RECEIPTS TAX SURETY BOND

- 7.1 Section 7-1-55A, NMSA 1978 provides that any person (as defined in Section 7-1-3, NMSA 1978) engaged in the construction business who does not have his principal place of business in New Mexico and enters into a prime construction contract to be performed in this State shall, at the time such contract is entered into, furnish the Director of the Revenue Division, Taxation and Revenue Department, or his delegate with a surety bond or other acceptable security in a sum equivalent to the gross receipts to be paid under the contract multiplied by the applicable rate of the gross receipts tax imposed by Section 7-9-4, NMSA 1978 to secure payment of the tax imposed on the gross receipts from the contract, and shall obtain a certificate from the Director of the Revenue Division, Taxation and Revenue Department, or his delegate that the requirements of this paragraph have been met.
- 7.2 If the total sum to be paid under the contract is changed by ten percent or more after the date the surety bond or other acceptable security is furnished, to the Director or his delegate, such person shall increase or decrease, as the case may be, the amount of the bond or security within fourteen days after the change (7-1-55B, NMSA 1978).
- 7.3 In addition to the above requirements, the Contractor will be subject to all the requirements of the City Procurement Code.

8.0 CONTRACTOR'S GROSS RECEIPTS TAX REGISTRATION

- 8.1 Section 7-10-4, NMSA 1978 provides that any person (as defined in Section 7-10-3, NMSA 1978) performing services for the City of Santa Fe, as those terms are used in the Gross Receipts and Compensating Tax Act (Section 7-10-1 to 7-10-5, NMSA 1978), must be registered and be issued an identification number with the Revenue Division of the Taxation and Revenue Department to pay the gross receipts tax.
- 8.2 The identification number is needed to properly complete the approval process of the contract; therefore, so as to cause no delay in the processing, the Contractor must register with the State of New Mexico, Taxation and Revenue

Department. For information contact:

Revenue Division
Taxation and Revenue Department
Manual Lujan Building
1200 St. Francis Drive
Santa Fe, New Mexico 87503
(505) 988-2290

- 8.3 If any person who performs services for the City of Santa Fe is not registered to pay the gross receipts tax, the City shall withhold payment of the amount due until the person has presented evidence of registration with the Taxation and Revenue Department to pay the gross receipts tax.

9.0 CONTRACT WITH NONRESIDENT PERSON OR PARTNERSHIPS OR UNADMITTED FOREIGN CORPORATIONS; AGENT FOR SERVICE OF PROCESS

- 9.1 Special attention of Bidders is called to requirements of Sections 13-4-21 through 13-4-24, NMSA 1978, whereby a public works contract with a nonresident person or partnership or foreign corporation not authorized to do business in the State shall contain a specific provision designating an agent resident within the State, and his address, upon whom process and writs in any action or proceeding against such business may be served in any action arising out of such contract.

10.0 STATE ALLOWANCES

- 10.1 The Contractor shall purchase the "Allowed Materials" as directed by the Owner through the Owner's Representative/Engineer on the basis of the lowest and the best Bid of at least three competitive Bids. If the actual price for purchasing the "Allowed Materials" is more or less than the "Cash Allowance", the Contract Price shall be adjusted accordingly. The adjustment in Contract Price made on the basis of the purchase price without additional charges for overhead, profit, insurance, or any other incidental expenses. The cost of installation of the "Allowed Materials" shall be included in the applicable section of the Specifications covering the work.

11.0 MINIMUM WAGE RATES

- 11.1 This project is subject to New Mexico State Wage Rate *Wage Decision # SF-14-0364 B* and the City of Santa Fe's Minimum Wage Ordinance both of which are attached.

12.0 FORM OF CHANGE ORDER AND CHANGE ORDER NOTICE TO PROCEED

- 12.1 The provided forms issued by the Owner are to be utilized by the Contractor, Owner's Representative/Engineer, and the Owner pursuant to the requirements of the General Conditions.

13.0 STATE OF NEW MEXICO, CONSTRUCTION INDUSTRIES DIVISION (CID)

- 13.1 The Contractor, at his own expense, shall secure the required building permits from the State CID as required for this Project. Contractor shall adhere to the requirements established for inspections.

14.0 CITY OF SANTA FE REQUIREMENTS

- 14.1 The General Contractor shall include in the Bid the cost of all landfill dumping fees; additionally, the Contractor shall be responsible that all rubble, excess materials, etc., are disposed of at an approved, legal dumping site.
- 14.2 Construction debris and human debris must be cleaned from the site before contractor leaves site daily.
- 14.3 The Contractor shall adhere to any applicable City of Santa Fe ordinances, resolutions, guidelines, and other requirements to complete the work.

CONTRACT EXHIBITS

Exhibit I – Wage Rates and Labor Enforcement Fund Registration

Exhibit II – Technical Specifications

Exhibit III – City of Santa Fe Minimum Wage Ordinance

Exhibit IV – Public Utilities Department Water Division Construction Standards and Specifications

Exhibit V – Construction Drawings

EXHIBIT I – WAGE RATES AND LABOR ENFORCEMENT FUND REGISTRATION

1.0 WAGE RATES

This project is subject to the Minimum Wage Rates as determined by the New Mexico State Labor & Industrial Commission pursuant to Chapter 13, Section 13-14-11, NMSA 1978. The Minimum Wage Rates to be paid by the Contractor and any Subcontractors to their employees on this project are as listed in the New Mexico State Labor and Industrial Commission Minimum Wage Rate Decision Number ***SF-14-0364 B***.

A copy of this decision is bound in these documents immediately following this page. The Contractor shall submit within three days of the notice of award, a complete sub-contractor list and Statements of Intent (SOI) to pay Prevailing Wages for each contractor and subcontractor. In addition, all Contractors and sub-contractors shall submit one (1) certified copy of the project bi-weekly payroll, as required, to the City of Santa Fe Water Division, 801 W. San Mateo Road, Santa Fe, NM 87505, C/O Project Engineer, not later than five (5) working days after the close of each payroll period. The prime contractor shall be responsible for the submission of copies of payrolls of all sub-contractors. In addition, the contractor must ensure that when the project has been completed, the Affidavits of Wages Paid (AWP) is sent to the City of Santa Fe, Water Division at the same address as provided above.

This project is subject to the City of Santa Fe Minimum Wage Rate Ordinance Compliance: under Ordinance No. 2003-8, passed by the Santa Fe City Council on February 26, 2003 as well as any subsequent changes to the ordinance throughout the term of this contract.

(New Mexico State Labor & Industrial Commission Wage Rate Decision **WGD** & City of Santa Fe Minimum Wage Ordinance 2003-8 Following This Sheet)

New Mexico Department of Workforce Solutions
Public Works

625 Silver Ave SW, Suite 410, Albuquerque, NM 87102
Phone: (505)-841-4400 fax to: (505) 841-4423 or Email to: public.works@state.nm.us

Wage Decision # SF-14-0364 B

NOTIFICATION OF AWARD (NOA)

THIS WAGE DECISION # EXPIRES FOR BIDS ON 07/10/14

Description and Location of Work: Water Division Administration Building Photovoltaic System
Installation of a 94.2 KW photovoltaic system including site lighting, power improvements, electrical system upgrades, and site restoration at the Water Division's Administration Building

City of Santa Fe

County of Santa Fe

801 W. San Mateo Road

REMINDER for Agency Conducting BID Process: If bids are NOT submitted before new wage rates go into effect, a NEW wage decision WILL be required.

After the Contracting Agency awards this project the Wage Rate Poster and the Wage Rate Packet, excluding this NOA and Subcontractor List, must be delivered to the **GENERAL/PRIME CONTRACTOR**. The Contracting Agency or its agent must complete this form (including the next page listing all of the subcontractors including all tiers of subcontractors) and fax or mail it to the address above. **If the project is canceled**, this form must be completed by the Contracting agency conducting the bid process and the wording "Cancelled" written on the form and send to the Labor Relations Division. Failure to submit the NOA in a timely manner is a violation of paragraph 11.1.2.9.B (3) of the Public Works Minimum Wage Act Policy Manual.

General/Prime Contractor Company Name: _____ License#: _____

Address: _____ City: _____ State: _____ Zip: _____

Telephone: _____ Fax: _____

Project Contact's name: _____ E-Mail: _____

Approximate Date Work to Start: _____

Estimated Completion Date: _____

Estimated Cost of Project: _____

Bid Opening Date: _____

Note: The General/Prime Contractor **MUST** mail/fax in their Statement of Intent to Pay Prevailing Wages to the Contracting Agency or its agent before beginning work on the project. Each Subcontractor (and all tiers of subcontractors) **MUST** also mail/fax their Statement of Intent to Pay Prevailing Wages to the General/Prime Contractor 3 days after award of project. After work on the project is completed **and before, final payment**, is made to subcontractors and all tiers of subcontractors, the contractor and sub-contractors must mail/fax their Affidavit of Wages paid to the Contracting Agency for final payment.

Signature for Contracting Agency (or agent) _____

Printed Name _____

Email address for Contracting Agency (not agent) _____ **Required Field**

Date _____

SUBCONTRACTOR LIST

DO NOT list suppliers or professional services (such as surveyors)
INCLUDE individual subcontractor dollar amount for project

Email to: public.works@state.nm.us or fax to: (505) 841-4423

Please include **2nd & 3rd Tier** subcontractors. Make extra copies of form if necessary.

Wage Decision. # **SF-14-0364 B**

General Contractor:

Company Name: _____
 Address: _____ City: _____ State: _____ Zip: _____
 E-Mail Address: _____ License No.: _____
 Phone No.: _____ Fax No.: _____ Sub _____ 2nd TIER _____ 3rd TIER _____
 (To Whom) (To Whom)
 Work to be performed: _____ Start Date: _____ Amount (\$): _____

Company Name: _____
 Address: _____ City: _____ State: _____ Zip: _____
 E-Mail Address: _____ License No.: _____
 Phone No.: _____ Fax No.: _____ Sub _____ 2nd TIER _____ 3rd TIER _____
 (To Whom) (To Whom)
 Work to be performed: _____ Start Date: _____ Amount (\$): _____

Company Name: _____
 Address: _____ City: _____ State: _____ Zip: _____
 E-Mail Address: _____ License No.: _____
 Phone No.: _____ Fax No.: _____ Sub _____ 2nd TIER _____ 3rd TIER _____
 (To Whom) (To Whom)
 Work to be performed: _____ Start Date: _____ Amount (\$): _____

Company Name: _____
 Address: _____ City: _____ State: _____ Zip: _____
 E-Mail Address: _____ License No.: _____
 Phone No.: _____ Fax No.: _____ Sub _____ 2nd TIER _____ 3rd TIER _____
 (To Whom) (To Whom)
 Work to be performed: _____ Start Date: _____ Amount (\$): _____

Company Name: _____
 Address: _____ City: _____ State: _____ Zip: _____
 E-Mail Address: _____ License No.: _____
 Phone No.: _____ Fax No.: _____ Sub _____ 2nd TIER _____ 3rd TIER _____
 (To Whom) (To Whom)
 Work to be performed: _____ Start Date: _____ Amount (\$): _____

Company Name: _____
 Address: _____ City: _____ State: _____ Zip: _____
 E-Mail Address: _____ License No.: _____
 Phone No.: _____ Fax No.: _____ Sub _____ 2nd TIER _____ 3rd TIER _____
 (To Whom) (To Whom)
 Work to be performed: _____ Start Date: _____ Amount (\$): _____

13/14 WATER DIVISION ADMINISTRATION BUILDING PHOTOVOLTAIC SYSTEM INSTALLATION, Bid '14/36/B

Water Division Administration Building Photovoltaic System : Wage Decision # SF-14-0364 B

Installation of a 94.2 KW photovoltaic system including site lighting, power improvements, electrical system upgrades, and site restoration at the Water Division's Administration Building.

Type "B" - GENERAL BUILDING Effective January 1, 2014

Trade Classification	Base Rate	Fringe Rate	Apprenticeship	Subsistence & Incentive Rates
Asbestos Worker - Heat & Frost Insulator	27.35	10.23	\$0.20	
Boilermaker	18.40	3.78	\$0.20	
Bricklayer/Blocklayer/Stonemason	22.85	6.00	\$0.74	
Carpenter/Lather	20.86	6.25	\$0.36	
Cement Mason	17.72	7.45	\$0.34	
Electricians				
Outside Classifications				
Groundman	22.32	8.62	\$0.36	
Equipment Operator	25.14	8.62	\$0.36	
Lineman/Tech	25.73	8.62	\$0.36	
Cable Splicer	26.91	8.62	\$0.36	
Inside Classifications				
Wireman/Technician	27.80	8.06	\$0.37	Refer to Note 1
Cable Splicer	29.53	8.06	\$0.37	
Sound Classifications				
Installer	23.39	8.31	\$0.24	
Technician	24.94	8.31	\$0.24	
Soundman	27.01	8.31	\$0.24	
Elevator Constructor	33.61	14.99	\$0.24	
Elevator Constructor Helper	15.55	3.56	\$0.25	
Glazier	20.15	4.15	\$0.35	
Ironworker	25.00	10.00	\$0.53	Refer to Note 2
Painter (Brush/Roller/Spray)	16.60	3.88	\$0.36	
Paper Hanger	19.71	8.42	\$0.35	
Drywall Finisher/Taper	19.64	3.91	\$0.34	
Plasterer	18.65	7.15	\$0.35	
Plumber/Pipefitter	28.30	11.00	\$0.63	Refer to Note 3
Roofer	15.18	0.50	\$0.54	
Sheetmetal Worker	26.56	13.41	\$0.45	Refer to Note 4
Soft Floor Layer	20.74	4.40	\$0.35	
Sprinkler Fitter	24.41	11.27	\$0.28	
Tile Setter	14.80	1.20	\$0.00	
Tile Setter Helper	13.00	1.02	\$0.00	
Laborers				
Group I	15.04	4.25	\$0.27	
Group II	15.61	4.25	\$0.27	
Group III	15.91	4.25	\$0.27	
Group IV	16.01	4.25	\$0.27	
Group V	16.21	4.25	\$0.27	
Group VI	16.36	4.25	\$0.27	
Operators				
Group I	28.03	5.16	\$0.50	
Group II	29.07	5.16	\$0.50	
Group III	29.15	5.16	\$0.50	
Group IV	29.21	5.16	\$0.50	
Group V	29.27	5.16	\$0.50	
Group VI	29.37	5.16	\$0.50	
Group VII	29.47	5.16	\$0.50	
Group VIII	30.55	5.16	\$0.50	
Truck Drivers				
Group I	20.56	5.34	\$0.55	
Group II	20.68	5.34	\$0.55	
Group III	20.76	5.34	\$0.55	
Group IV	20.88	5.34	\$0.55	
Group V	20.93	5.34	\$0.55	

13/14 WATER DIVISION ADMINISTRATION BUILDING PHOTOVOLTAIC SYSTEM INSTALLATION, Bid '14/36/B

Group VI	21.03	5.34	\$0.55	
Group VII	21.13	5.34	\$0.55	
Group VIII	21.27	5.34	\$0.55	
Group IX	21.42	5.34	\$0.55	

NOTE: SUBSISTENCE AND INCENTIVE RATES BY TRADE & LOCATION

#1 - Inside Electricians working at a Los Alamos County job site get \$4.10/hr. subsistence pay plus base/fringe. Inside Electricians working at a Lea Co. job site get \$75.00/day subsistence pay plus base/fringe.

#2 - Ironworkers working on projects 50+ miles over the most direct regularly traveled route from Albuquerque, or the employee's home, whichever is closer, shall be paid \$5.00/hr. subsistence plus base/fringe. The "Big I" Interchange in Albuquerque, or the employee's home, respectively shall be used as basing points. The current State of New Mexico Official Highway Map shall be the reference for routes and distances. All of Santa Fe County shall be \$5.00/hr subsistence area.

#3 - Plumbers/Pipefitters working at a Los Alamos County job site get \$.80/hr. incentive pay plus base/fringe.

#4 - Sheet Metal Workers working at a Los Alamos County job site get \$2.00/hr. incentive pay plus base/fringe.

#4 - Sheet Metal Workers living 60+ miles from a San Juan County job site get \$3.00/hr. subsistence pay plus base/fringe. Sheet Metal Workers working 90+ miles from Contractors Homebase & employees home get \$50.00/day subsistence pay plus base/fringe regardless of county.

SUSANA MARTINEZ
GOVERNOR



CELINA BUSSEY
SECRETARY

JOHN SANCHEZ
LT. GOVERNOR

STATE OF NEW MEXICO
DEPARTMENT OF WORKFORCE SOLUTIONS
625 Silver Ave SW Suite 410
Albuquerque, NM 87102
Telephone (505) 841-4405
Fax (505) 841-4420

PUBLIC WORKS PROJECT REQUIREMENTS

As a participant in a Public Works project valued at more than \$60,000 in the State of New Mexico, the following list addresses many of the responsibilities that are assigned by statute to each project stakeholder.

Contracting Agency

- Ensure that all contractors/prime contractors wishing to bid on a Public Works project when the project is \$60,000 or more are actively registered with the Labor Relations Division, Labor Enforcement Fund (LEF) prior to bidding.
- Provide completed Notice of Award (NOA) and Sub-Contractor list to Labor Relations Division promptly after the project is awarded.
- Provide updates to the Sub-Contractor list to the Labor Relations Division

General Contractor

- Provide to the Contracting Agency within 3 (Three) days of award a complete sub-contractor list and Statements of Intent (SOI) to pay Prevailing Wages for each contractor.
- Ensure that all sub-contractors wishing to bid on a Public Works project when their portion is over \$60,000 are actively registered with the Labor Relations Division prior to bidding.
- Submit bi-weekly certified payrolls to the owner/contracting agency.
- Make certain NM Apprenticeship and Training Fund payments are to be paid either to an approved Apprenticeship program or to the Labor Relations Division.
- Confirm the Wage Rate poster, provided by the Labor Relations Division, is displayed at the job site in an easily accessible place.
- Make sure, when a project has been completed, the Affidavits of Wages Paid (AWP) is sent to the Contracting Agency.

Sub-Contractor

- Ensure that all sub-contractors wishing to bid on a Public Works project when their portion is over \$60,000 are actively registered with the Labor Relations Division prior to bidding.
- Submit bi-weekly certified payrolls to the General Contractor(s).
- Make certain NM Apprenticeship and Training Fund payments are to be paid either to an approved Apprenticeship program or to the Labor Relations Division.

“AN EQUAL OPPORTUNITY EMPLOYER”

Additional Information

Reference material and forms for these requirements are available through the following New Mexico Workforce Solutions Web Link. www.dws.state.nm.us/new/Labor_Relations/publicworks.html.

Additional Information

Additional information, requirements, and documents on these topics can be found through the Public Works web pages.

- Labor Enforcement Fund (LEF)
- Weekly Certified Payroll
- Public Works Apprenticeship and Training Fund (PWAT)
- Forms: Statement of Intent (SOI), Affidavit of Wages Paid (AWP)
- Prevailing Wage Rates (Base Rates, Fringe, and Apprenticeship Contributions)

CONTACT INFORMATION

Contact us for any questions relating to Public Works Projects.

Kim Kew at kim.kew@state.nm.us or 505-841-4405
Otis Caddy LynnO.Caddy@state.nm.us 505-841-4406
Stacey Lowrey Stacey.Lowrey@state.nm.us 505-841-4412

**STATEMENT OF INTENT TO PAY PREVAILING WAGES
To Be Completed Before Construction Starts
All Fields Are Required**

FORM MUST BE SENT TO THE CONTRACTING AGENCY WITHIN 3 DAYS OF THE AWARD

General Contractor Information		
Company Name:		
Address:		
City :	State:	Zip:
Phone:	Fax:	E-Mail:
Estimated Start Date:	State Wage Decision Number:	
Project Title:	Project Physical Address:	
Total Contract Amount:	Estimated Completion Date:	
Print Name:	General Contractor Signature:	
Sub Contractor Information		Start date on this project:
Sub Contract Amount:		
Company Name:		
Address:		
City:	State:	Zip:
Phone:	Fax:	E-Mail:
Print Name:	Sub Contractor Signature:	
2nd, 3rd, etc. Tier Sub-Contractor Information		Start date on this project:
Contract Amount:		
Company Name:		
Address:		
City:	State:	Zip:
Phone:	Fax:	E-Mail:
Print Name:	Tier Signature:	

I hereby certify that the above information is correct and that all workers I employ on this public works project will be paid no less than the Prevailing Wage Rate(s) as determined by the Department of Workforce Solutions, Labor Relations Division for this project as identified by the State Wage Decision Number. I understand that contractors who violate Prevailing Wage Laws (i.e., incorrect job classification, improper payment of prevailing wages, and/or overtime, etc.), are subject to debarment procedures and shall be required to pay any back wages due to workers. (Ref. Labor Relations Division, Public Works Minimum Wage Act Policy Manual (11.1.2 NMAC) & Public Works Minimum Wage Act (13-4-11 through 13-4-18, NMSA 78).

Contractor's Signature

Date

INSTRUCTIONS FOR COMPLETING STATEMENT OF INTENT TO PAY PREVAILING WAGES

GENERAL CONTRACTOR

1. Enter general contractor information and provide signature.
2. Enter State Wage Decision Number as listed in bid documents. (Example: BE-13-0123 B)
3. Enter project title - listed in bid documents.
4. Enter project physical address - exact location of project (job site).
5. Enter estimated start & completion dates of project.
6. Enter general contractor's contract amount.
7. All Statements must be sent to the Contracting Agency.

SUB CONTRACTOR

1. Enter general contractor information, but general contractor signature is not needed.
2. Enter sub contractor information as indicated and provide signature.
3. Enter sub contractor contract amount.

NOTE: A separate signed form is needed for each contractor.

2ND TIER SUB CONTRACTOR

1. Enter general contractor information, but general contractor signature is not needed.
2. Enter sub contractor information; subcontractor signature not needed.
3. Enter 2nd tier sub information and provide signature.
4. Enter 2nd tier contractors contract amount.

3RD TIER AND HIGHER CONTRACTOR

1. Attach a copy of this completed form & list the 3rd tier contractor information under the 2nd tier

EXHIBIT II – TECHNICAL SPECIFICATIONS

**WATER DIVISION ADMINISTRATION BUILDING PHOTOVOLTAIC SYSTEM
INSTALLATION**

Table of Contents

- Summary of Work
- Basic Requirements
- Measurement and Payment
- Submittals
- Construction Facilities and Temporary Controls
- Basic Electrical Requirements
- Conduit
- Building Wire and Cable
- Grounding and Bonding
- Supporting Devices
- Electrical Identification
- Utility Service Interconnection
- Distribution Switchboards
- Enclosed Switches
- Panelboards
- Photovoltaic Power Systems
- Pre-Engineered Structural Parking Canopies for Solar Panel Installations
- Sedona Series, LED fixture
- Laredo Series, LED fixture

**SECTION 01010
SUMMARY OF WORK**

1.01 SECTION INCLUDES

- A. Description of Project
- B. Location of work to be performed.
- C. Structural Engineering Requirements

1.02 DESCRIPTION OF PROJECT

- A. Purpose of Project & General Scope
 - a. The purpose of this project is to generate electricity for the Water Division Administration Building by installing a 94.2 KW photovoltaic system including site lighting, power improvements and site restoration, in accordance with the drawings, specifications, and other contract documents.
 - b. The work consists of, but is not limited to complete in place installation of a 94.2 KW photovoltaic system including site lighting, power improvements, modifications to the existing site gate, and site restoration, in accordance with the drawings, specifications, and other contract documents.

- c. The location of the project is the Water Division Administration Building at 801 W. San Mateo Road, Santa Fe, New Mexico, 87505.
 - d. Some of the work is under existing asphalt, sidewalk, curb and gutter.
 - e. The Contractor will not be responsible for submittal of the PNM interconnect agreement.
- B) Existing System
- a. The existing system has a traditional electrical service connected to PNM's distribution system.
- C) Qualifications
- a. The Contractor shall have installed at least one grid interconnected photovoltaic system utilizing carport structures, with a minimum output of 200KW.
- D) Scope of Work Tasks
- a. Draft Work Plan/Schedule
 - i. The Contractor shall develop a draft work plan and schedule.
 - ii. The Draft Work Plan should focus on the following areas:
 - 1. Schedule
 - 2. Work Hours
 - 3. Communications with the facility and customers.
 - b. Final Work Plan and Project Kick-Off
 - i. The Consultant shall prepare a detailed Final Work Plan to be utilized throughout project execution. The Work Plan will be developed based on the Contract Scope of Work. The Final Work Plan shall be prepared in collaboration with Water Division Staff.
 - ii. Kick-off Meeting
 - 1. The Contractor shall prepare for and lead a project kickoff meeting.
 - 2. The meeting shall be held at the Water Division Administration Building and include the key Contractor staff, any subcontractors and appropriate Water Division staff and key stakeholders.
 - 3. The kickoff meeting shall introduce the project team, confirm the project objectives and discuss key issues and concerns.
 - 4. At the meeting, the Contractor will also present the scope of work, key deliverables, budget, schedule and communications plan and other project plans as described in the draft Final Work Plan.

5. The Contractor will provide the suggested meeting agenda and draft Final Work Plan to the Water Division at least one week prior to the Kickoff Meeting.

E) Schedule

- a. The entire photovoltaic installation project must be substantially complete by January 31, 2015. Substantial completion must include interconnect and final approval of the system from PNM.
- b. Contractor to plan to conduct all of the tasks that will occur.

1.03 LOCATION OF WORK

- A) The Water Division Administration Building is located at 801 W. San Mateo Road, Santa Fe, New Mexico, 87505.

1.04 STRUCTURAL ENGINEERING REQUIREMENTS

- A) The Contractor shall ensure that structural plans for this project are stamped by a registered structural engineer in the State of New Mexico.

**SECTION 01011
BASIC REQUIREMENTS**

1.0 GENERAL

1.1 SECTION INCLUDES

SUMMARY OF WORK

- 1.2 Work by Owner
- 1.3 Contractor Use of Premises
- 1.4 Regulatory and Permit Requirements

CONTRACT CONSIDERATIONS

- 1.5 Cash Allowances
- 1.6 Contingency Allowance
- 1.7 Inspection and Testing Allowances
- 1.8 Schedule of Values
- 1.9 Application for Payment
- 1.10 Change Procedures
- 1.11 Alternates

COORDINATION AND MEETINGS

- 1.12 Coordination
- 1.13 Field Engineering
- 1.14 Cutting and Patching
- 1.15 Conferences
- 1.16 Progress Meetings

SUBMITTALS

- 1.17 Submittal Procedures
- 1.18 Construction Progress Schedules
- 1.19 Shop Drawings
- 1.20 Samples
- 1.21 Manufacturers' Certificates
- 1.22 Construction Photographs

QUALITY CONTROL

- 1.23 Quality Assurance/Control of Installation
- 1.24 References
- 1.25 Field Samples
- 1.26 Inspection and Testing Laboratory Services
- 1.27 Manufacturers' Field Services and Reports

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- 1.28 Temporary Utilities
- 1.29 Temporary Sanitary Facilities
- 1.30 Barriers and Fencing
- 1.31 Enclosures
- 1.32 Protection of Installed Work
- 1.33 Security
- 1.34 Access Roads and Parking
- 1.35 Progress Cleaning
- 1.36 Project Identification
- 1.37 Field Offices and Sheds
- 1.38 Removal of Utilities, Facilities and Controls

MATERIAL AND EQUIPMENT

- 1.39 Products
- 1.40 Transportation, Handling, Storage and Protection
- 1.41 Substitutions

STARTING OF SYSTEMS

- 1.42 Starting Systems
- 1.43 Demonstration and Instructions
- 1.44 Testing, Adjusting and Balancing

CONTRACT CLOSEOUT

- 1.45 Contract Closeout Procedures
- 1.46 Final Cleaning
- 1.47 Adjusting
- 1.48 Project Record Documents
- 1.49 Operation and Maintenance Data
- 1.50 Warranties
- 1.51 Spare Parts and Maintenance Materials

1.2 WORK BY OWNER:

- A. Unless specified on construction documents, Owner will be responsible for removal of all non-fixed materials.
- B. Owner will be responsible for notification of all occupants, and matters dealing with press/public relations.

1.3 CONTRACTOR USE OF PREMISES: For purposes of this paragraph, normal working hours shall be defined as 6:00 A.M. through 8:00 P.M., Monday through Saturday.

- A. A variance for extending hours may be considered.
- B. Work that requires Disruption of power at the entire facility must be performed outside of normal office hours (7:00 AM thru 5:00 PM). Length of power disruption shall be limited to 2 hours at a time. Contractor shall schedule all outages with owner 14 days in advance.
- C. Work can not disrupt vehicle egress paths, fire lanes, fire clearances, and other life safety considerations.
- D. A limited staging area of approximately 2500 square feet can be provided on-site.

1.4 REGULATORY AND PERMIT REQUIREMENTS:

- A. Regulatory and Permit Requirements: Contractor is responsible for obtaining all necessary permits required for construction as indicated on the drawings.

1.5 CASH ALLOWANCES

- A. Utility Payments: \$10,000

1.6 CONTINGENCY ALLOWANCE

- B. Contingency Cash Allowance: \$10,000

1.7 INSPECTION AND TESTING ALLOWANCES - Not Applicable

1.8 SCHEDULE OF VALUES

- A. Submit Schedule of Values on EJCDC Form 1910-8-E or contractor's standard form is acceptable.
- B. Submit Schedule at time of First application for payment.

1.9 APPLICATION FOR PAYMENT

- A. Submit 3 Original documents at each application on AIA form or contractor's standard using the AIA format.
- B. Content and Format: Utilize the Schedule of Values for listing items in Application for Payment.
- C. Payment Period: Will be discussed at Pre-Construction Meeting.

1.10 CHANGE PROCEDURES

- A. Change Order Forms: as included in the project manual.

1.11 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option.

Alternates will be taken in sequential order as funds permit. Contractor must indicate on the Bid Form whether it is an additive or deductive alternate by crossing out the inapplicable item.

- B. Coordinate related Work and modify surrounding Work as required.
- C. Alternates or substitutions will not be accepted for the following equipment: Photovoltaic Panels and Inverters

1.12 COORDINATION

- A. Due to the nature of activity at the building, the Contractor shall be required to carefully schedule work with the building occupants' representative. No work shall be performed without an approved schedule from the representative. The Owner will continue to occupy and use the buildings during the period of construction. Any work which will, in the Contractor's opinion, require coordination with Owner's staff and/or services shall be scheduled through the Owner's representative. This includes any shut down of power, utilities, heating, cooling, ventilation, etc. Contractor shall provide and employ protection for all areas and areas adjacent to that in which he is working.
- B. It shall be the responsibility of each trade to fully examine the documents and understand the full scope of work. The Prime contractor shall be responsible for coordinating all work by his own company and the subcontractors to provide a complete system. It shall further be the responsibility of each trade to coordinate his work with the work of other trades.
- C. Verify utility requirement characteristics of operating equipment are compatible with building utilities.

- D. Coordinate space requirements and installation of mechanical and electrical work which are indicated on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable.
- E. In finished areas, conceal conduit, pipes, ducts and wiring within the construction.

1.13 FIELD ENGINEERING

- A. Immediately upon entering project site with the purpose of beginning work, the Contractor shall locate all general reference points and take such action necessary to prevent their destruction, lay out his own work and be responsible for all lines, elevations, and measurements of buildings, utilities and other work executed by him under this Contract. He must exercise proper precaution to verify all aspects of the drawings and specifications shown on the drawings before laying out work. He will be held responsible for any error resulting from his failure to exercise such precaution.

1.14 CUTTING AND PATCHING

- A. Employ a skilled and experienced installer to perform cutting and patching new Work; restore Work with new Products.
- B. Submit written request in advance of cutting or altering structural or building enclosure elements.

1.15 CONFERENCES

- A. The Engineer will schedule a pre-construction conference for all affected parties.
- B. When required in individual specification Section, convene a pre-installation conference at the project site prior to commencing Work of the Section.

1.16 PROGRESS MEETINGS

- A. The frequency of progress meetings will be determined at the pre-construction conference.

1.17 SUBMITTAL PROCEDURES

- A. Contractor to comply with the Submittal Procedures defined in each Trade Section.

1.18 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 10 days after Notice to Proceed for the Engineer review.
- B. Submit revised schedules with each Application for Payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of Work at each submission.

1.19 SHOP DRAWINGS

- A. Submit eight (6) opaque reproductions of which 2 will be retained by the Engineer and 4 will be returned to the Contractor.

1.20 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product.
- B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Engineer's selection.

1.21 MANUFACTURERS' CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Engineer for review, in quantities specified for in Submittals.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

1.22 CONSTRUCTION PHOTOGRAPHS: Not Required

1.23 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions.
- C. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.24 REFERENCES

- A. Conform to reference standards current as to the date of agreement between Owner and Contractor.
- B. Should specified reference standard conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

1.25 FIELD SAMPLES

- A. Construct field samples for review as required by individual specifications Sections. Acceptable samples represent a quality level for the Work.

1.26 INSPECTION AND TESTING LABORATORY SERVICES - Not Applicable

1.27 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specifications Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions that are supplemental or contrary to manufactures written instructions.

1.28 TEMPORARY UTILITIES

- A. Under normal operating conditions, Electric power will be furnished by the Owner at no cost to this Contractor unless otherwise indicated in the Construction Documents.
- B. During power outages, the Contractor shall provide electrical power for necessary lighting and for execution of the work at no additional cost to the owner above the amounts included in the contractor's bid. See paragraph 1.3 of this Section.

1.29 TEMPORARY SANITARY FACILITIES

- A. Workmen at the project may not use the toilet facilities in the existing building.
- B. The Contractor must supply temporary sanitary facilities for their employees. Location of temporary sanitary facilities shall be approved by the owner.

1.30 BARRIERS AND FENCING

- A. Provide fencing and barriers to prevent unauthorized entry to construction areas and to protect the public from open trenches and manholes.
- B. Construction: Commercial grade plastic safety fence.
- C. The Contractor shall ensure the facility is secured at all times when no employees or construction workers are on-site.

1.31 ENCLOSURES

- A. Provide temporary weather-tight closures to exterior openings to permit acceptable working conditions and protection of the Work.
- B. Provide temporary partitions as required to separate Work areas from owner occupied areas, to prevent penetration of dust and moisture into Owner occupied areas, and to prevent damage to existing materials and equipment.
- C. Paint surfaces exposed to view from Owner occupied areas.
- D. Prohibit traffic or storage upon waterproofed or roofed surfaces.

1.32 PROTECTION

- A. Contractor shall be responsible for the care and protection of the existing building and adjacent facilities and grounds on the site during progress of the work, and shall repair and make good any damage to same without additional cost to the Owner.
- B. The existing buildings contain furnishings, materials, and equipment used for various purposes. It shall be the responsibility of this Owner to remove, store, and protect such furnishings, materials and equipment found in areas where work required in this Contract is being executed. Notify the owner 24 hours in advance of requiring furnishings to be moved.

1.33 SECURITY

- A. Due to the nature of the facility and the occupants of the facility, the owner reserves the right to impose significant security procedures on the contractor to protect the building occupants. These procedures will include but will not be limited to:
 - 1. Background screening of contractor and sub-contractor employees.
 - 2. Issuance of security badges to contractor and sub-contractor employees.
- B. Contractor shall erect temporary barriers in the construction areas. Barriers shall be of adequate design to prevent those not employed in the construction from entering the construction areas and to adequately protect all employees and members of the public from injury due to construction of the project. Locate barriers as required and coordinate location of the barriers with the Owner's Representative. Upon completion of the project, remove barriers from the site.

1.34 ACCESS ROADS AND PARKING

- A. Existing on-site roads may be used for construction traffic.
- B. Arrange for temporary parking areas to accommodate construction personnel.

1.35 PROGRESS CLEANING

- A. Contractor shall at all times keep the building free from rubbish and material that may constitute an obstruction to the progress of the work or a hazard to the safety of the persons employed in the work. Maintain site in a clean and orderly condition, removing all rubbish from the site.

1.36 PROJECT IDENTIFICATION - Not Applicable

1.37 FIELD OFFICES AND SHEDS - Not Applicable

1.38 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

- A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 ft.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.39 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components specifically identified for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by the Contract Documents.
- C. Use interchangeable components of the same manufacture for similar components.

1.40 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

- A. Transport, handle, store and protect Products in accordance with manufacturer's instructions.

1.41 SUBSTITUTIONS

- C. Engineer will consider requests for Substitutions only at Submittal Review.
- D. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- E. Submit 1 copy of request for Substitution for consideration.

1.42 STARTING SYSTEMS

- A. Provide seven days notification prior to start-up of each item.
- B. Ensure that each piece of equipment or system is ready for operation.
- C. Execute start-up under supervision of responsible persons in accordance with manufacturer's instructions.

- D. Submit a written report that equipment of system has been properly installed and is functioning correctly.

1.43 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Submit sign-in sheet and meeting materials to Engineer.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item or equipment at scheduled times, at equipment location.

1.44 TESTING, ADJUSTING AND BALANCING - Not Applicable

1.45 CONTRACT CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.
- B. Submit final Application for Payment identifying total adjusted Contract Sum/Price, previous payments, and amount remaining due.
- C. Contractor to comply with the Closeout Requirements and Procedures for Substantial Completion and Final Inspection for each Trade.

1.46 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean interior and exterior surfaces exposed to view. Vacuum carpeted and soft surfaces.
- C. Clean debris from site, roofs, gutters, downspouts, and drainage systems.
- D. Replace filters of operating equipment.

1.47 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.48 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of Contract Documents to be utilized for record documents.
- B. Record actual revisions to the Work. Record information concurrent with construction progress.
- C. Specifications: Legibly mark and record at each Product Section a description of actual Products installed.
- D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction.
- E. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.49 OPERATION AND MAINTENANCE DATA

- A. Submit 3 sets prior to final inspection, bound in 8 1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", and title of project.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized, with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Contents:
 - 1. Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Operation and maintenance instructions, arranged by system.
 - 3. Project documents and certificates.

1.50 NOT APPLICABLE

1.51 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide Product, spare parts, maintenance and extra materials in quantities specified in individual specifications Sections.
- B. Deliver to Project site and place in location.

2.0 PRODUCTS Not Used

3.0 EXECUTION Not Used

END OF SECTION

**SECTION 01025
MEASUREMENT AND PAYMENT**

1.01 SECTION INCLUDES

- A. General requirements for measurement and payment of bid items.
- B. Description of bid items.

1.02 GENERAL

- A. The total base bid price and alternate bid price shall cover all work required by the contract documents for construction of a completely functional and operational facility. All costs, including mobilization and demobilization, bonds, licenses, furnishing all materials, equipment, supplies, and appurtenances; demolition and disposal of debris in accordance with all applicable laws and regulation; providing all construction plans, equipment, and tools; and performing all necessary labor and supervision to fully complete the work in accordance with these contract documents, shall be included in the unit and lump sum prices bid. All work not specifically set forth as a pay item in the bid proposal shall be considered a subsidiary obligation of Contractor and as such, all costs in connection therewith shall be included in the prices bid.

1.03 MEASUREMENT AND PAYMENT

- A. All measurements and payments will be based on completed work performed in strict accordance with the specifications and in accordance with contract-unit prices and schedule of values. Incidental work and items not listed in the contract-unit price schedule will not be paid for separately, but will be included in the payment for the listed item or items to which such incidental work applies. Measurement and payment for lump sum items shall be full compensation for all labor, equipment, materials, testing, and incidentals necessary to perform the work in accordance with these contract documents, and shall include all incidentals not provided under other items.
- B. Item numbers listed below correspond directly to bid item numbers in the bid form:

Bid Item No. 10 – Structural

Payment for structural shall be made as a lump sum. Work shall include all materials and installation as provided in the plans and specifications.

Bid Item No. 20 – Building Electrical Upgrades

Payment for building electrical upgrades shall be made as a lump sum. Work shall include all materials and installation as provided in the plans and specifications.

Bid Item No. 30 – Modifications to Side Gate to include moving the gate, reinstalling fencing, all materials, electrical work and site restoration

Payment for modifications to side gate shall be made as a lump sum. Work shall include moving the gate, installing loop detection for vehicles exiting the parking lot, reinstalling fencing, all materials, electrical work and site restoration as provided in the plans and specifications.

Bid Item No. 40 – Complete Photovoltaic Installation Including Electrical Interconnection

Payment for electrical: complete installation of all photovoltaic components shall be made as a lump sum. Work shall include all materials and installation as provided in the plans and specifications.

Bid Item No. 50 – Asphalt pavement removal & disposal

Payment for removal and disposal of City asphalt pavement shall be made at the unit price per square yard for less than 2” and 2” through 6” thickness. Payment for removal of City asphalt pavement greater than 6” thickness shall be made at the unit price times the actual thickness in inches divided by 6 inches (e.g. paving 10” thickness paid at the unit price times 1.67). Work shall include cutting pavement as marked, removing and satisfactorily disposing of pavement and any incidental items required to complete the Work.

Bid Item No. 60 – Replace pavement

Payment for replacing pavement shall be made at the unit price per square yard for the asphalt pavement up to 6” in thickness. Work includes preparing sub-grade, furnishing and installing sub-base and base pavement course(s) with or without a laydown machine, cleaning-up, removing and disposing of any excess materials and any incidental items required to complete the Work.

Bid Item No. 70 – Removal of Existing Parking Lot Striping and Restriping of Parking Lot

Payment for removal of existing parking lot striping and restriping of parking lot shall be made as a lump sum. Work includes furnishing all materials, equipment and labor for the removal of existing striping through either blackout paint or water blasting with no damage to the existing pavement, removal of dirt and debris that would affect the quality of the striping, and placement of high-durable acrylic painted markings installed at a minimum of 15 mil thickness.

**SECTION 01300
SUBMITTALS**

1.01 SECTION INCLUDES

- A. General submittal requirements and procedures
- B. Contractor’s responsibility
- C. Submittal Requirements
- D. Shop Drawings
- E. Product Data
- F. Samples

1.02 ADDITIONAL REQUIREMENTS

- A. Conditions of the Contract

1.03 GENERAL REQUIREMENTS

- A. Requirements in this section are in addition to any specific submittal requirements as set forth in Specification sections and General Provisions of these Contract Documents.
- B. Review, acceptance, or approval of substitutions, schedules, shop drawings, lists of materials, and procedures submitted or required by the Contractor shall not add to the Contract amount, and all additional costs which may result therefrom shall be solely the obligation of the Contractor.
- C. The Owner is not precluded, by virtue of review, acceptance, or approval, from obtaining a credit for Contractor for construction savings resulting from allowed concessions in the work or materials therefore.
- D. It shall not be the responsibility of the Owner to provide engineering other services to protect the Contractor from additional costs accruing from such approvals.
- E. Provide submittals for the items of equipment and materials in accordance with the Bid Items and any other materials to be used on this project.
- F. Submit concurrently all equipment which forms a system or subsystem that must be reviewed simultaneously because of coordination requirements.
- G. Catalogs for submittals should have unrelated pages removed or clearly marked "Not Applicable", and capacity and parameters relating to the item or items specified should be clearly marked.
- H. Submit all forms, data, information, certificates, schedules, etc., as required in each technical specification section.

1.04 CONTRACTOR RESPONSIBILITIES

- A. Review all submittal prior to submission.
- B. Determine and verify:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar identifying data.
 - 4. Conformance with specifications.
 - 5. Conflict with other items of construction past, present, or future.

- C. Coordinate each submittal with requirements of the Work and of the Contract Documents.
- D. Notify the Owner in writing, at time of submission, of any deviations in the submittals from requirements of the Contract Documents.
- E. Begin no fabrications or work which requires submittals until return of submittals with Owner's final review.

1.05 SUBMITTAL PROCEDURES

- A. Make submittals promptly and in such sequence as to cause no delay in the Work and at least 3 days before approval is required.
- B. Number of submittal required:
 - 1. Submit the appropriate number of copies of each submittal to provide number required for use by the Contractor plus the number of copies retained by Owner.
 - 2. Owner will retain three (3) copies of the submittal.
- C. Transmittal Procedures:
 - 1. Transmit each submittal on Owner accepted transmittal form.
 - 2. Sequentially number each form; re-submittal to have original number with an alphabetic suffix.
 - 3. Identify project, Contractor, Specification section number, pertinent Drawing sheet and detail number(s), products, units, and assemblies, and the system or equipment identification or tag number as shown.
 - 4. Provide one transmittal form for each individual section. Do not combine sections.
 - 5. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with requirements of the Contract Documents.
 - 6. Transmit submittals in accordance with finalized schedule of submittals.
 - 7. Provide space for Owner/Engineer review stamps.
 - 8. Revise and resubmit submittals are required; identify all changes made since previous submittal.
 - 9. Use Owner approved submittal transmittal form.

1.06 SHOP DRAWINGS

- A. Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, and other data prepared by Contractor or any subcontractor, manufacturer, supplier, or distributor, which illustrates how specific portions of Work shall be fabricated and/or installed. Design drawings shall not be used as Shop Drawings. Indicate all components that are required to assure proper shop fabrication and job installation.

- B. The Contractor agrees that shop drawing submittals processed by the Owner do not become contract Documents and are not Change Orders; that the purpose of the shop drawing review is to establish a reporting procedure and is intended for the Contractor's convenience in organizing his work and to permit the Owner to monitor the Contractor's progress and understanding of the design.

1.07 PRODUCT DATA

- A. Includes catalog cuts.
- B. Preparation:
 - 1. Clearly mark each copy to identify pertinent products or models.
 - 2. Show performance characteristics and capacities.
 - 3. Show dimensions and clearances required.
 - 4. Show wiring or piping diagrams and controls
 - 5. For equipment with electrical schematic given in Drawings, provide statement from manufacturer that equipment operation per schematic is appropriate for equipment.
- C. Installation data for all materials and equipment for which operation and maintenance manuals are not provided:
 - 1. Provide manufacturer's installation instructions and recommendations.
 - 2. Provide referenced standards for installation.
- D. Manufacturer's standard schematic drawings and diagrams:
 - 1. Modify drawings and diagrams to delete information which is not applicable to the Work.
 - 2. Supplement standard information to provide information specifically applicable to the Work.

1.08 SAMPLES

- A. Office samples shall be sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of the project, with integrally related parts and attachment devices.
 - 2. Full range of color, texture, and pattern.
- B. Include identification on each sample, with full project information.
- C. Paint and Powder Coat Colors: To be determined by the Owner.

END OF SECTION

**SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

1.01 SECTION INCLUDES

- A. Temporary Sanitary Facilities
- B. Protection of Work Site
- C. Noise Control

1.02 ADDITIONAL REQUIREMENTS

- C. Conditions of the Contract

1.03 TEMPORARY SANITARY FACILITIES

Provide necessary sanitary disposal facilities for use by employees. Maintain facilities in a clean and sanitary manner.

1.04 PROTECTION OF WORK SITE

- A. The contractor shall be responsible for protection of the work site for the duration of the project.
- B. At completion of the work, is considered incidental to the project and no separate payment will be allowed.

1.05 NOISE CONTROL

- A. All work will adhere to the City of Santa Fe noise ordinance.
- B. All equipment used for the work will incorporate noise control measures to ensure that noise is not exceeding City of Santa Fe noise ordinance.

END OF SECTION

**SECTION 16010
BASIC ELECTRICAL REQUIREMENTS**

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Basic Electrical Requirements specifically applicable to Division 16 Sections, in addition to Division 1 - General Requirements and the General Conditions of the Contract.

1.2 WORK BY OWNER

- A. The Owner will be responsible for the following:
 - 1. See Division 1

1.3 OWNER FURNISHED PRODUCTS - Not Applicable

1.4 WORK SEQUENCE

- A. As required under Division 1.

1.5 FUTURE WORK

- A. Provide for future work under requirements of Division 1.

1.6 ALLOWANCES

- A. Cash Allowance: Refer to Division 1 for allowance sum applicable to Work.

1.7 UNIT PRICES - Not Applicable

1.8 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates: Per Division 1

1.9 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.10 SUBMITTALS

- A. Submit shop drawings and product data grouped to include complete submittals of related system, products, and accessories in a single submittal. Engineer will commence review only when all data has been received.
- B. Submittal form to identify Project, contractor, Subcontractor or supplier; and pertinent Contract Document references. Mark dimensions and values in units to match those specified.
- C. Apply Contractor's stamp, signed or initial, certifying that review, verification of Products required, field dimensions, adjacent construction Work and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. The Contractor shall determine and verify field measurements and field construction criteria for conformance with Drawings and Specifications and for conflicts with other items of Construction

past or present. He shall coordinate each submittal with the requirements of the Work and of the Contract Documents and notify the Engineer in writing, at the time of the submission, of any and all deviations in the submittals from requirements of the Work and Contract Documents.

No fabrication or work which requires submittals shall begin until submittals are returned with the Engineer's approval.

- E. Identify variations for Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- F. Engineer's review does not constitute acceptance or responsibility for accuracy or dimensions, nor shall it relieve the Contractor from meeting any requirements of the Work and Contract Documents, nor shall it constitute approval for any deviation from the Contract Documents unless such deviations are specifically stated as such on the submittal and specifically allowed by the Engineer by specific written notification for each such variation. The Engineer's review will not relieve the Contractor from responsibility for errors or omissions in the Shop Drawings.
- G. Revise and resubmit submittals as required; identify all changes made since previous submittal.

1.11 SUBSTITUTIONS

- A. Prior approval of materials and equipment in Division 16 will not be considered. Contract documents indicate specified equipment and acceptable alternatives. Any other equipment/material proposed must meet or exceed that specified. Equipment/material will be reviewed for compliance during submittal review process per Section 1.10.
- B. Engineer will consider requests for Substitutions only at Submittal Review.
- C. Documents each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

1.12 REGULATORY REQUIREMENTS

- A. All electrical work shall be performed in strict accordance with the UBC, ANSI, NEC, NFPA, ADA, Model Energy Code, all applicable provisions of the Local Authorities having jurisdiction and the State of New Mexico. All materials and labor necessary to comply with rules, regulations, and ordinances shall be provided. Where the Drawings and/or specifications indicate material or construction in excess of code requirements or visa-versa, the more stringent application shall govern.
- B. Furnish products listed by Underwriters Laboratories, Inc. or other testing firm acceptable to authority having jurisdiction.
- C. Permits necessary for the performance of the work under this contract shall be secured and paid for by the Contractor. Final inspection by the Engineer will not be made or certificate of final payment issued until certificates of satisfactory inspection from the inspection authorities are delivered.

1.13 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

- B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of Architect/Engineer before proceeding.

1.14 SEQUENCING AND SCHEDULING

- A. Construct Work in sequence under provisions of Division 1.

1.15 RECORD AS-BUILT DRAWINGS

- A. The Contractor shall modify original reproducible drawings and two sets of the Project Manual delineating recorded as-built conditions of the Project or record documents compiled from the job records. The Contractor may obtain reproducible drawings from the office of the Architect or Engineer. This set of documents shall show all changes in the Work including actual location of all Work.
- B. Completion of Record As-built Drawings is a condition of Final Inspection and consideration of Final Payment.

END OF SECTION

**SECTION 16111
CONDUIT**

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Metal conduit.
- B. Flexible metal conduit.
- C. Liquid tight flexible metal conduit.
- D. Electrical metallic tubing.
- E. Nonmetal conduit.
- F. Electrical nonmetallic conduit.
- G. Flexible nonmetallic conduit.
- H. Fittings and conduit bodies.

1.2 RELATED SECTIONS

- A. Fire Stopping.
- B. Roofing penetrations.

- C. Section 16170 - Grounding and Bonding.
- D. Section 16190 - Supporting Devices.

1.3 REFERENCES

- A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.
- C. ANSI C80.5 - Rigid Aluminum Conduit.
- D. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- E. ANSI/NFPA 70 - National Electrical Code.
- F. NECA "Standard of Installation".
- G. NEMA RN 1 - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
- H. NEMA TC 2 - Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC - 80).
- I. NEMA TC 3 - PVC Fittings for use with Rigid PVC Conduit and Tubing.

1.4 DESIGN REQUIREMENTS

- A. Conduit Size: ANSI/NFPA 70.

1.5 SUBMITTALS

- A. Submit under provisions of Section 16010.
- B. Product Data: Provide for metallic conduit, flexible metal conduit, liquidtight flexible metal conduit, metallic tubing and, nonmetallic conduit.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Accurately record actual routing of conduits larger than 2 inches.

1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for

purpose specified and shown.

1.8 FIELD SAMPLES - Not Applicable

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle Products to site under provisions of Division 1.
- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- D. Protect PVC conduit from sunlight.

1.10 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Verify routing and termination locations of conduit prior to rough-in.
- C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

2.0 PRODUCTS

2.1 CONDUIT REQUIREMENTS

- A. Minimum Size: Conduits shall be sized appropriately – questions on sizing shall be directed to the Owner.
- B. Underground Installations:
 - 1. More than Five Feet from Foundation Wall: Use thickwall nonmetallic conduit.
 - 2. Within Five feet from Foundation Wall: Use rigid steel conduit, intermediate metal conduit, and thickwall nonmetallic conduit.
 - 3. In or Under Slab on Grade: Use thickwall nonmetallic conduit.
 - 4. Minimum Size: 1/2 inch.
- C. Outdoor Locations, above Grade: Use Rigid steel conduit, intermediate metal conduit, and electrical metallic tubing.
- D. In Slab Above Grade: Use thickwall nonmetallic conduit.
- E. Wet and Damp Locations: Use rigid steel conduit, intermediate metal conduit, and electrical metallic tubing.
- F. Dry Locations:
 - 1. Concealed: Use rigid steel conduit, intermediate metal conduit, and electrical metallic tubing.
 - 2. Exposed: Use rigid steel conduit, intermediate metal conduit, and electrical metallic tubing.

2.2 METAL CONDUIT

- A. Rigid Steel Conduit: ANSI C80.1.
- B. Intermediate Metal Conduit (IMC): Rigid steel.
- C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel fittings.

2.3 PVC COATED METAL CONDUIT - Not Used

2.4 FLEXIBLE METAL CONDUIT

- A. Description: Interlocked steel construction.
- B. Fittings: ANSI/NEMA FB 1.

2.5 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Manufacturers:
 - 1. Carlon
 - 2. Substitutions: Under provisions of Section 16010.
- B. Description: Interlocked steel construction with PVC jacket.
- C. Fittings: ANSI/NEMA FB 1.

2.6 ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers:
 - 1. Allied
 - 2. Substitutions: Under provisions of Section 16010.
- B. Description: ANSI C80.3; galvanized tubing.
- C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; steel set screw type.

2.7 NONMETALLIC CONDUIT

- A. Manufacturers:
 - 1. Carlon
 - 2. Substitutions: Under provisions of Section 16010.
- B. Description: NEMA TC 2; Schedule 40 PVC.
- C. Fittings and Conduit Bodies: NEMA TC 3.

2.8 NONMETALLIC TUBING - Not Allowed

3.0 EXECUTION

3.1 INSTALLATION

- A. Install conduit in accordance with NECA "Standard of Installation".
- B. Install nonmetallic conduit in accordance with manufacturer's instructions.
- C. Arrange supports to prevent misalignment during wiring installation.
- D. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- E. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits.
- F. Fasten conduit supports to building structure and surfaces under provisions of Section 16190.
- G. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- H. Do not attach conduit to ceiling support wires.
- I. Arrange conduit to maintain headroom and present neat appearance.
- J. Route conduit parallel and perpendicular to walls.
- K. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- L. Route conduit in and under slab from point-to-point.
- M. Do not cross conduits in slab.
- N. Maintain adequate clearance between conduit and piping.
- O. Maintain 12 inches clearance between conduit and surfaces with temperatures exceeding 104 degrees F (40 degrees C).
- P. Cut conduit square using saw or pipecutter; de-burr cut ends.
- Q. Bring conduit to shoulder of fittings; fasten securely.
- R. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire

area inserted in fitting. Allow joint to cure for 20 minutes, minimum.

- S. Use conduit hubs to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
- T. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2 inch size.
- U. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.
- V. Provide suitable fittings to accommodate expansion and deflection where conduit crosses control and expansion joints.
- W. Provide suitable pull string in each empty conduit except sleeves and nipples.
- X. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- Y. Ground and bond conduit under provisions of Section 16170.
- Z. Identify conduit under provisions of Section 16195.

3.2 INTERFACE WITH OTHER PRODUCTS

- A. Install conduit to preserve fire resistance rating of partitions and other elements.
- B. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket.

END OF SECTION

SECTION 16123 BUILDING WIRE AND CABLES

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Building wire and cable.
- B. Nonmetallic-sheathed cable.
- C. Underground feeder and branch circuit cable.
- D. Service entrance cable.
- E. Armored cable.

- F. Metal clad cable.
- G. Wiring connectors and connections.

1.2 RELATED SECTIONS

- A. Section 16111 - Conduit.
- B. Section 16195 - Identification.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.4 SUBMITTALS

- A. Not Applicable

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.7 FIELD SAMPLES

- A. Not Applicable

1.8 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper unless indicated as aluminum or "AL".
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions. Include wire and cable lengths within 10 feet of length shown.

1.9 COORDINATION

- A. Coordinate Work under provisions of Division 1.
- B. Determine required separation between cable and other work.
- C. Determine cable routing to avoid interference with other work.

2.0 PRODUCTS

2.1 BUILDING WIRE AND CABLE

- A. Description: Signal conductor insulated wire.
- B. Conductor: Copper
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: ANSI/NFPA 70, type THHN/THWN

2.2 PV (Photovoltaic) CABLE

- A. Use PV Cable as manufactured by Southwire, 90 Deg C XLP or XLPE insulated intended for Solar Applications and rated USE-2 when direct buried.
- B. Conductor: Copper
- C. Insulation Voltage Rating: 600 or 1000 volts to match inverter rating.
- D. Insulation: Use PV Cable as manufactured by Southwire, 90 Deg C XLP or XLPE insulated intended for Solar Applications and rated USE-2 when direct buried..

3.0 EXECUTION

3.1 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire has been completed.

3.2 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

3.3 WIRING METHODS

- A. Concealed Dry Interior Locations: Use building wire, Type THHN/THWN insulation, in raceway.
- B. Exposed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation,

in raceway.

- C. Above Accessible Ceilings: Use building wire, Type THHN/THWN insulation, in raceway or metal clad cable.
- D. Wet or Damp Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
- E. Exterior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
- F. Underground Installations: Use only building wire, Type THHN/THWN insulation, in raceway.
- G. PV Source circuits: Use XLPE PV Rated cable for exposed photovoltaic power circuits and USE-2 PV Rated Cable for direct bury applications.

3.4 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Use solid conductor for feeders and branch circuits 10 AWG and smaller.
- C. Use stranded conductors for control circuits.
- D. Use conductor not smaller than 12 AWG for power and lighting circuits.
- E. Use conductor not smaller than 14 AWG for control circuits.
- F. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75
- G. Pull all conductors into raceway at same time.
- H. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
- I. Protect exposed cable from damage.
- J. Support cables above accessible ceiling, using spring metal clips or plastic cable ties to support cables from structure. Do not rest cable on ceiling panels.
- K. Use suitable cable fittings and connectors.
- L. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- M. Clean conductor surfaces before installing lugs and connectors.
- N. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.

- O. Use suitable reducing connectors or mechanical connector adaptors for connecting aluminum conductors to copper conductors.
- P. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape un-insulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
- Q. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
- R. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.

3.5 INTERFACE WITH OTHER PRODUCTS

- A. Identify wire and cable.
- B. Identify each conductor with its circuit number or other designation indicated on Drawings.

3.6 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Division 1.
- B. Inspect wire and cable for physical damage and proper connection.
- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
- D. Verify continuity of each branch circuit conductor.

END OF SECTION

SECTION 16170 GROUNDING AND BONDING

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

1.2 RELATED SECTIONS - Not Applicable.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code

1.4 GROUNDING ELECTRODE SYSTEM

- A. Metal underground water pipe.
- B. Metal frame of the building.
- C. Concrete-encased electrode.
- D. Buried Electrode
- E. Rod electrode.

1.5 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 10 ohms.

1.6 SUBMITTALS

- A. Submit under provisions of Section 16010.
- B. Product Data: Provide data for grounding electrodes and connections.
- C. Test Reports: Indicate overall resistance to ground and resistance of each electrode.

1.7 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 16010
- B. Accurately record actual locations of grounding electrodes.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum three years experience.

1.9 REGULATORY REQUIREMENTS

- A. Conform to requires of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

2.0 PRODUCTS

2.1 ROD ELECTRODE

- A. Material: Copper Copper-clad steel.
- B. Diameter: 5/8 inch.
- C. Length: 10 feet.

2.2 ACTIVE ELECTRODES - Not Used

2.3 MECHANICAL CONNECTORS

- A. Material: Bronze.

2.4 EXOTHERMIC CONNECTIONS

- A. CAD-WELD or Equal

2.5 WIRE

- A. Material: Stranded copper.
- B. Foundation Electrodes: 3/0 AWG
- C. Grounding Electrode Conductor: Size to meet NFPA 70 Requirements.

2.6 GROUNDING WELL COMPONENTS

- A. Well Pipe: 8 inch diameter by 24 inch long concrete pipe with belled end.
- B. Well Cover: Cast iron with legend "GROUND" embossed on cover.

3.0 EXECUTION

3.1 EXAMINATION

- A. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.2 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install rod and buried electrodes on locations indicated. Install additional electrodes as required to achieve specified resistance to ground.

- C. Provide grounding well pipe with cover at each rod location. Install well pipe top flush with finished grade.
- D. Provide grounding electrode conductor and connect to reinforcing steel in foundation footing.
- E. Provide bonding to meet Regulatory Requirements.
- F. Bond together metal siding not attached to grounded structure; bond to ground.
- G. Bond together reinforcing steel and metal accessories.
- H. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus or bushing.

3.3 INTERFACE WITH OTHER PRODUCTS

- A. Interface with lightning protection system.

3.4 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- B. Use suitable test instrument to measure resistance to ground of system. Perform testing in accordance with test instrument manufacturer's recommendations using the fall-of-potential method.

END OF SECTION

SECTION 16190 SUPPORTING DEVICES

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Conduit and equipment supports.
- B. Anchors and fasteners.

1.2 REFERENCES

- A. NECA - National Contractors Association.
- B. ANSI/NFPA 70 - National Electrical Code.

1.3 SUBMITTALS

- A. Submit under provisions of Section 16010.
- B. Product Data: Provide manufacturer's catalog data for fastening systems.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

2.0 PRODUCTS

2.1 PRODUCT REQUIREMENTS

- A. Materials and Finishes: Provide adequate corrosion resistance.
- B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
- C. Anchors and Fasteners:
 - 1. Concrete Structural Elements: Use precast insert system, expansion anchors and preset inserts.
 - 2. Steel Structural Elements: Use beam clamps, steel ramset fasteners, and welded fasteners.
 - 3. Concrete Surfaces: Use self-drilling anchors and expansion anchors.
 - 4. Hollow Masonry Plaster, and Gypsum Board Partitions: Use toggle bolts and hollow wall fasteners.
 - 5. Solid Masonry Walls: Use expansions anchors and preset inserts.
 - 6. Sheet Metal: Use sheet metal screws.
 - 7. Wood Elements: Use wood screws.

2.2 STEEL CHANNEL

- A. Manufacturer:
 - 1. Unistrut
 - 2. B-Line
- B. Description: Painted steel.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Do not use spring steel clips and clamps.
- E. Obtain permission from Architect/Engineer before using powder-actuated anchors.
- F. Do not drill or cut structural members.
- G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- H. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- I. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch off wall.
- J. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

END OF SECTION

SECTION 16195 ELECTRICAL IDENTIFICATION

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Nameplates and labels.
- B. Wire and cable markers.
- C. Conduit markers.

1.2 RELATED SECTIONS

- A. Painting.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code

1.4 SUBMITTALS

- A. Submit under provisions of Section 16010.
- B. Product Data: Provide catalog data for nameplates, labels, and markers.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under regulatory requirements. Include instructions for storage, handling, protection, examination, preparations and installation of Product.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.

1.6 EXTRA MATERIALS - Not Applicable

2.0 PRODUCTS

2.1 NAMEPLATES AND LABELS

- A. Name plates: Engraved three-layer laminated plastic, white letters on black background.
- B. Locations:
 - 1. Each electrical distribution and control equipment enclosure.
 - 2. Communication cabinets.
- C. Letter Size:
 - 1. Use 1/8 inch letters for identifying individual equipment and loads.
 - 2. Use 1/4 inch letters for identifying grouped equipment and loads.
- D. Labels: Embossed adhesive tape, with 3/16 inch white letters on black background. Use only for identification of individual wall switches and receptacles, control device stations.

2.2 WIRE MARKERS

- A. Manufacturers:
 - 1. Brady or Approved Equal

- B. Description: Cloth, Tape, split sleeve, or tubing type wire markers.
- C. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection.
- D. Legend:
 - 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.
 - 2. Control Circuits: Control wire number indicated on schematic and interconnection diagrams on shop drawings.

2.3 CONDUIT MARKERS

- A. Location: Furnish markers for each conduit longer than 6 feet.
- B. Spacing: 20 feet on center.
- C. Color:
 - 1. 480 Volt System: Orange.
 - 2. 208 Volt System: Blue.
 - 3. Fire Alarm System: Red.
 - 4. Telephone/Data System: Yellow.
 - 5. Public Address, Intercom System: Green.

2.4 UNDERGROUND WARNING TAPE

- A. Manufacturers:
 - 1. Brady or Approved Equal
- B. Description: 4 inch wide plastic tape, detectable type, colored red with suitable warning legend describing buried electrical lines

3.0 EXECUTION

3.1 PREPARATION

- A. Degrease and clean surfaces to receive nameplates and labels.

3.2 APPLICATION

- A. Install nameplate and label parallel to equipment lines.
- B. Secure nameplate to equipment front using screws or rivets.
- C. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.
- D. Identify conduit using field painting.

- E. Paint colored band on each conduit longer than 6 feet.
- F. Paint bands 20 feet on center.
- G. Identify underground conduits using underground warning tape. Install one tape per trench at 3 inches below finished grade.

END OF SECTION

**SECTION 16421
UTILITY SERVICE INTERCONNECTION**

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Arrangement with Utility Company for upgrade of existing electrical service.
- B. Arrangement with Utility Company for interconnection of utility interactive photovoltaic system.
- C. Metering equipment.

1.2 RELATED SECTIONS

- A. Section 16625 – Photovoltaic Systems

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.
- B. Public Service Company of New Mexico Rate Interconnection and Safety Standards for Qualifying Facilities up to and including 10MW.
- C. Serving Utility Technical Requirements for Interconnection and Parallel Operation of Qualifying Facilities up to and including 10MW.

1.4 SYSTEM DESCRIPTION

- A. Utility Company : PNM Electric Cooperative
- B. Service System Characteristics: 120/208 Volts, three phase, 4 wire.

1.5 UTILITY REQUIRED SUBMITTALS

- A. Owner shall be responsible for submission of interconnect application and all associated

requirements. Contractor is responsible for coordination with the utility prior to commencement of work.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with Utility Company written requirements.

1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. or testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.

1.8 PRE-INSTALLATION CONFERENCE

- A. Convene two weeks prior to commencing work of this Section.

1.9 FIELD MEASUREMENTS AND EQUIPMENT LOCATIONS

- A. Verify that field measurements and equipment locations will meet the requirements of the utility prior to rough-in.

2.0 PRODUCTS

2.1 UTILITY METERS

- A. Meters will be furnished by Utility Company.

2.2 METERING SOCKET

- A. Conform to utility requirements for metering.

3.0 EXECUTION

3.1 EXAMINATION

- A. Verify conditions under provisions of Division 1.
- B. Verify that interconnect equipment is ready to be connected and energized.

3.2 PREPARATION

- A. Make arrangements with Utility Company to obtain permanent interactive electrical service to the Project.
- B. Coordinate location of Utility Company's facilities to ensure proper access is available.

3.3 INSTALLATION

- A. Furnish and Install Primary Power conduits for Utility terminal pole to location of pad mount transformer.
- B. Install concrete transformer pad.
- C. Furnish and install secondary power conduits and conductors from utility padmount transformer to new service equipment.
- D. Install Inverter output circuits to utility REC meter.
- E. Install Interconnect circuits from Main Distribution panel to Customer Generation Service Disconnect.
- F. Install utility REC meter and make connections between Meter Socket and Customer Generation disconnect as instructed by the utility.

END OF SECTION

SECTION 16426 DISTRIBUTION SWITCHBOARDS

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Main switchboard.
- B. Distribution switchboard.
- C. Enclosed Transfer Switch
- D. Power Meter

1.2 RELATED SECTIONS

- A. Not Applicable

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electric code.
- B. ANSI/IEEE C12.1 - Code for electricity metering.

- C. ANSI C39.1 - Electrical analog indicating instruments.
- D. ANSI C57.13 - Instrument transformers.
- E. NEMA AB 1 - Molded case circuit breakers and molded case switches.
- F. NEMA KS 1 - Enclosed switches.
- G. NEMA PB 2 - Deadfront distribution switchboards.
- H. NEMA PB 2.1 - Proper handling, installation, operation and maintenance of deadfront switchboards rated 600 volts or less.

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Shop drawings: Indicate front and side views of enclosures with overall dimensions shown; conduit entrance locations and requirements; nameplate legends; size and number of bus bars per phase, neutral, and ground; and switchboard metering details.
- C. Product data: Provide electrical characteristics including voltage, frame size and trip ratings, fault current withstand ratings, and time-current curves of all equipment and components.
- D. Test reports: Indicate results of factory production tests.
- E. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under regulatory requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

1.5 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Division 1.
- B. Maintenance data: Include spare parts data listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

1.6 QUALIFICATIONS

- A. Manufacturer: company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.

- B. Furnish products listed and classified by Underwriters Laboratories, Inc as suitable for purpose specified and shown.

1.8 PREINSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this section, under provisions of Section 01001.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01001.
- B. Deliver in 48 inch maximum shipping splits, individually wrapped for protection and mounted on shipping skids.
- C. Accept switchboards on site. Inspect for damage.
- D. Store in a clean dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- E. Handle in accordance with NEMA PB 2.1 and manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to switchboard internal components, enclosure, and finish.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Conform to NEMA PB 2 service conditions during and after installation of switchboards.

1.11 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings and instructed by manufacturer.

1.12 MAINTENANCE MATERIALS

- A. Provide maintenance materials under provisions of Section 01001.
- B. Provide two of each key.

1.13 EXTRA MATERIALS - Not Applicable

2.0 PRODUCTS

2.1 MANUFACTURERS

- A. Square D
- B. Westinghouse/Cutler Hammer
- C. General Electric
- D. Substitutions: Under provisions of Division 1.

2.2 SWITCHBOARD

- A. Description: NEMA PB 2 with electrical ratings and configurations as indicated.
- B. Main section devices: Individually mounted.
- C. Distribution section devices: Panel mounted
- D. Auxiliary Section Devices: Not Applicable.
- E. Bus Material: Copper, standard size.
- F. Bus Connections: Accessible from front for maintenance.
- G. Fully insulate load side bus bars. Do not reduce spacing of insulated bus.
- H. Ground Bus: Extend length of switchboard.
- I. Line and Load Terminations: Accessible from the front of the switchboard, suitable for the conductor materials and sizes indicated.
- J. Provide metering transformer compartment for Owner's use.
- K. Future Provisions: Fully equip spaces for future devices with bussing and bus connection, suitable insulated and braced for short circuit currents.
- L. Enclosure: Indoor or Outdoor as indicated on the drawings.
 - 1. Align sections at front and rear.
 - 2. Switchboard Height: 90 inches, excluding floor sills, lifting members and pull boxes.
 - 3. Finish: Manufacturer's standard light gray enamel over external surfaces. Coat internal surfaces with minimum one coat corrosion-resisting paint, or plate with cadmium or zinc.

2.3 MAIN BREAKER

- A. Solid-state Molded Case Circuit Breakers: NEMA AB 1, provide with electronic sensing, timing and tripping circuits for adjustable current settings; adjustable long time trip; and adjustable short time trip. Provide stationary mounting. Provide ground fault sensing

integral with circuit breaker on service ratings of 1000 Amps or larger.

2.4 DISTRIBUTION BREAKER - 800 AMPERES AND LARGER

- A. Solid-state Molded Case Circuit Breakers: NEMA AB 1, provide with electronic sensing, timing and tripping circuits for adjustable current settings; adjustable instantaneous trip; adjustable long time trip; and adjustable short time trip. Provide stationary mounting. Provide ground fault sensing integral with circuit breaker where indicated on the drawings.

2.5 DISTRIBUTION BREAKER - SMALLER THAN 800 AMPERES

Solid-state Molded Case Circuit Breakers: NEMA AB 1, provide with electronic sensing, timing and tripping circuits for adjustable current settings; adjustable instantaneous trip; adjustable long time trip; and adjustable short time trip. Provide stationary mounting. Provide ground fault sensing integral with circuit breaker where indicated on the drawings.

2.6 AUTOMATIC TRANSFER SWITCH

- A. Not Applicable

2.7 POWER METER/ANALYZER

- A. Manufacturers:
 - 1. Power Logic CM3350 series with local display.
 - 2. Substitutions: Under provisions of Division 1.
- B. Meets ANSI C12.16 Class 10 Revenue
- C. Frequency Range: 45 to 66 Hertz
- D. Harmonic Response: 50th Harmonic
- E. Accuracy: Maintained 3 to 300 percent of Full Scale and from -0.5 to 1.00 to 0.5 power factor.
 - 1. Current and Voltage: plus/minus 0.2 percent
 - 2. Power and Energy: plus/minus 0.4 percent
 - 3. Frequency: plus/minus 0.4 percent
 - 4. Power Factor: plus/minus 0.8 percent
- F. Ethernet Communications and Web enabled.
- G. On board data logging and trending using 8MB internal memory.

2.8 METERING TRANSFORMERS

- A. Current Transformers: ANSI C57.13; 5 ampere secondary with secondary shorting device,

primary/secondary ratio as required, burden and accuracy consistent with connected metering and relay devices, 60 Hertz.

3.0 EXECUTION

3.1 EXAMINATION

- A. Verify conditions under provisions of Division 1.
- B. Verify that surface is suitable for switchboard installation.

3.2 INSTALLATION

- A. Install switchboard in locations shown on Drawings, in accordance with manufacturer's written instructions and NEMA PB 2.1.
- B. Tighten accessible bus connections and mechanical fasteners after placing switchboard.

3.4 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01001.
- B. Inspect completed installation for physical damage, proper alignment, anchorage, and grounding.
- C. Measure insulation resistance of each bus section phase to phase and phase to ground for one minute each, at test voltage of 1000 volts; minimum acceptable value for insulation resistance is 2 megohms.
- D. Check tightness of accessible bolted bus joints using calibrated torque wrench.

3.5 ADJUSTING

- A. Adjust all operating mechanisms for free mechanical movement.
- B. Tighten bolted bus connections in accordance with manufacturer's instructions.
- C. Adjust circuit breaker trip and time delay settings to values as instructed by the Engineer.

3.6 CLEANING

- A. Touch up scratched or marred surfaces to match original finish.

END OF SECTION

**SECTION 16441
ENCLOSED SWITCHES**

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Fusible switches.
- B. Nonfusible switches.
- C. Fuses.

1.2 REFERENCES

- A. NEMA KS 1 - Enclosed Switches.
- B. NFPA 70 - National Electrical Code.
- C. UL 198C - High-Interrupting Capacity Fuses; Current Limiting Type.
- D. UL 198C - Class R Fuses.

1.3 SUBMITTALS

- A. Submit under provisions of Section 16010.
- B. Product Data: Provide switch ratings and enclosure dimensions.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with NECA Standard of Installation.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum three years of experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and shown.

1.7 EXTRA MATERIALS

- A. Furnish under provisions of Section 16010
- B. Provide three of each size and type fuse installed.

2.0 PRODUCTS

2.1 MANUFACTURERS

- A. Square D
- B. Siemens
- C. Cutler Hammer

2.2 ENCLOSED SWITCHES

- A. Fusible Switch Assemblies: NEMA KS 1, Type HD load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position. Fuse clips: Designed to accommodate Class R fuses.
- B. Non-fusible Switch Assemblies: NEMA KS 1, Type HD load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position.
- C. Enclosures: NEMA KS 1.
 - 1. Interior Dry Locations: Type 1.
 - 2. Exterior Locations: Type 3R.

2.3 FUSES

- A. Manufacturers:
 - 1. Bussman.
 - 2. Gould Shawmut
- B. Description: Dual element, current limiting, time delay, one-time fuse, 250 volt UL 198E, Class RK 1.
- C. Interrupting Rating: 200,000 rms amperes.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install disconnect switches where indicated.
- B. Install fuses in fusible disconnect switches.

- C. Provide adhesive label on inside door of each switch indicating UL fuse class and size for replacement.

END OF SECTION

**SECTION 16470
PANELBOARDS**

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Distribution panelboards.
- B. Branch circuit panelboards.

1.2 RELATED WORK

- A. Supporting Devices.
- B. Electrical Identification: Engraved nameplates.

1.3 REFERENCES

- A. NECA (National Electrical Contractors Association: Standard of Installation".
- B. NEMA AB - 1 Molded Case Circuit Breakers.
- C. NEMA ICS 2 - Industrial Control Devices, Controllers, and Assemblies.
- D. NEMA KS 1 - Enclosed Switches.
- E. NEMA PB 1 - Panelboards.
- F. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
- G. NFPA 70 - National Electrical Code.

1.4 SUBMITTALS

- A. Submit under provisions of Section 16010.
- B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker, and fusible switch arrangement and sizes.

- C. Manufacturer's Installation Instructions: Indicated application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.5 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Record actual locations of Products; indicate actual branch circuit arrangement.

1.6 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Section 16010.
- B. Maintenance Data: Include spare parts data listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with NECA Standard of Installation.

1.8 QUALIFICATIONS

- D. Manufacturer: Company specializing in manufacturing the Products specified in this Section with minimum three years experience.

1.9 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and indicated.

1.10 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings and instructed by manufacturer.

1.11 MAINTENANCE MATERIALS

- A. Provide maintenance materials under provisions of Section 16010.
- B. Provide two of each panelboard key.

1.12 EXTRA MATERIALS

- A. Furnish under provisions of Division 1.

2.0 PRODUCTS

2.1 MANUFACTURERS

- A. Square D
- B. Seimens
- C. Cutler Hammer

2.2 DISTRIBUTION PANELBOARDS

- A. Panelboards: NEMA PB 1, circuit breaker type.
- B. Service Conditions:
 - 1. Temperature: 95 degrees F.
 - 2. Altitude: 7500 feet.
- C. Panelboard Bus: Copper, ratings as indicated. Provide copper ground bus in each panelboard.
- D. Minimum integrated short circuit rating: 14,000 Amperes symmetrical for 480 volt panelboards, 22,000 amperes rms symmetrical for 240 volt panelboards; or as indicated on the drawings.
- E. Molded Case Circuit Breakers: NEMA AB1. Provide circuit breakers with integral thermal and instantaneous magnetic trip in each pole. Provide circuit breakers UL listed as Type HACR for air conditioning equipment branch circuits.
- F. Molded Case Circuit Breakers with Current Limiters: NEMA AB 1. Provide circuit breakers with replaceable current limiting elements, in addition to intergral thermal and instantaneous magnetic trip in each pole.
- G. Current Limiting Molded Case Circuit Breakers: NEMA AB
 - 1. Provide circuit breakers with integral thermal and instantaneous magnetic trip in each pole, coordinated with automatically resetting current limiting elements in each pole. Interrupting rating 100,000 symmetrical amperes, let-through current and energy level less than permitted for same size Class RK-5 fuse.
- H. Provide circuit breaker accessory trip units and auxiliary switches as indicated.
- I. Enclosure: NEMA PB 1, Type 1 Cabinet box
- J. Cabinet Front: Surface type, fastened with concealed trim clamps. Provide hinged door with flush lock. Finish in manufacturer's standard grey enamel.

2.3 BRANCH CIRCUIT PANELBOARDS

- A. Lighting and Appliance Branch Circuit Panelboards: NEMA PB 1, circuit breaker type.

- B. Panelboard Bus: Copper ratings as indicated. Provide copper ground bus in each panelboard; provide insulated ground bus where scheduled.
- C. Minimum integrated short circuit rating: 14,000 Amperes symmetrical for 480 volt panelboards, 22,000 amperes rms symmetrical for 240 volt panelboards; or as indicated on the drawings.
- D. Molded Case Circuit Breakers: NEMA AB 1, bolt-on type thermal magnetic trip circuit breakers, with common trip handle for all poles. Provide circuit breakers UL listed as type SWD for lighting circuits. Provide UL Class A ground fault interrupter circuit breakers where scheduled. Do not use tandem circuit breakers.
- E. Enclosure: NEMA PB 1, Type as indicated on the drawings.
- F. Cabinet box: 6 inches deep; width: 20 inches
- G. Cabinet Front: Cabinet front with concealed trim clamps, concealed hinge, and flush lock all keyed alike. Finish in manufacturer's standard gray enamel.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install panelboards in accordance with NEMA PB 1.1.
- B. Install panelboards plumb. Install recessed panelboards flush with wall finishes. Provide supports as required.
- C. Height: 6 ft to top of panelboard; install panelboards taller than 6 ft with bottom no more than 4 inches above floor.
- D. Provide filler plates for unused spaces in panelboards.
- E. Provide typed circuit directory for each branch circuit panelboard. Adjust directory to reflect circuiting changes required to balance phase loads.
- F. Provide engraved plastic nameplates.
- G. Provide spare conduits out of each recessed panelboard to an accessible location above ceiling. Minimum spare conduits: 5 empty 1 inch. Identify each as SPARE.

3.2 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Division 1.
- B. Measure steady state load currents at each panelboard feeder; rearrange circuits in the

panelboard to balance the phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

- C. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, fusible switches, and fuses.

END OF SECTION

**SECTION 16625
PHOTOVOLTAIC SYSTEMS**

1.0 GENERAL

1.1 SECTION INCLUDES

- A. Photovoltaic (PV) Modules
- B. Static Power Converters (Inverters)
- C. PV Array Combiner Box

1.2 RELATED SECTIONS

- E. Section 16400 – Service and Distribution

1.3 REFERENCES

- A. NFPA 70 - National Electrical Code.
- B. UL 1741: Standard for Safety, Inverters, Converters, and Controllers for Use in Independent Power Systems.
- C. IEEE 929 Recommended Practice for Utility Interface of Photovoltaic (PV) system
- D. Photovoltaic Power Systems and The National Electric Code: Suggested Practices
- E. Public Service Company of New Mexico Rate Interconnection and Safety Standards for Qualifying Facilities up to and including 10MW.
- F. Serving Utility Technical Requirements for Interconnection and Parallel Operation of Qualifying Facilities up to and including 10MW.

1.4 SUBMITTALS

- A. Shop Drawings:
 - 1. Electrical diagrams including one-line and three line interconnection diagrams.

2. Parts List and Bill of Materials.
3. Performance Calculations including:
 - a. Monthly and Yearly Energy Production
 - b. Load Flow Calculations
 - c. Voltage Drop Calculations
- B. Qualifications and references of Photovoltaic System Contractor.
- C. Product Data: Provide data showing dimensions, weights, ratings, interconnection points, and internal wiring diagrams for the PV modules, PV Array Mounting racks, PV Circuit Combiners. Inverter and accessories.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.5 OPERATION AND MAINTENANCE DATA

- A. General Requirements
 1. Provide two complete sets of all data required by this section. Data shall be on 8-1/2 by 11 sheets and bound in durable high quality three ring binders.
 2. Include Copies of all submittal and shop drawing materials submitted under previous paragraph 1.4.
- B. Photovoltaic Modules
 1. Owner's manual or Manufacturer's product data sheet.
 2. Manufacturer's Operation and maintenance manuals.
 3. Starting, operating, and shutdown procedures.
 4. Name, address, and telephone number of local representative.
 5. Schedule of required maintenance and cleaning agents and methods.
 6. Warranty paperwork.
- C. Static Power Converter (Inverter)
 1. Owner's manual with programming and installation instructions.
 2. Default Program and set points.
 3. Listing of field programming variables and set points.
 4. Equipment wiring diagrams and schematics.
 5. Starting, operating, and shutdown procedures.
 6. Manufacturer's Operation and maintenance manuals.
 7. Name, address, and telephone number of local representative.
 8. Warranty Paperwork.
- D. Balance of System
 1. Owner's manual or Manufacturer's product data sheet.
 2. Manufacturer's Operation and maintenance manuals.
 3. Starting, operating, and shutdown procedures.
 4. Name, address, and telephone number of local representative.

5. Schedule of required maintenance and spare parts list including fuses.
6. Warranty paperwork.

E. Mounting Clamps and Hardware:

1. Manufacturer's product data sheets.
2. Manufacturer's design information for Wind and snow loading.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70 and the applicable amendments of the State of New Mexico Electrical Code.
- B. Comply with the requirements and interconnection standards of the Utility. Coordinate with the utility for exact requirements prior to rough-in or release of products for shipping. There shall be no additional costs to the owner for contractor's failure to coordinate with the utility.
- C. Contractor shall be responsible for submittal of interconnect application and all associated product information, drawings, and details required by the utility for system application.

1.7 WARRANTY.

- A. System Warranty: See Article 4 in the General Conditions of the Contract.
- B. Photovoltaic Modules; Manufacturer's standard combined power output and defect 25 year that includes panel replacement cost and labor.
- C. Static Power Converter: shall have a warranty of a 20 years minimum.
- D. LED Lighting: LED fixtures shall have a warranty of 5 years minimum.
- E. Balance of System Components: Manufacturer's standard warranty with a two year minimum.

1.8 QUALITY ASSURANCE

- A. All products used shall be listed, tested, and identified by UL, ETL, or other National Testing firm acceptable to the authority having jurisdiction.
- B. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- C. Installer:
 1. Company regularly engaged in the design and installation of Photovoltaic Systems of similar size and scope as this project and with minimum 5 years experience.

2. PV System installer shall possess an EE-98 Electrical Contractor's license and shall be in good standing with New Mexico Construction Industries Division.

2.0 PRODUCTS

2.1 PHOTOVOLTAIC (PV) MODULES

- A. MANUFACTURERS: Sun Power E20-327
- B. Description: Framed Flat Plate module using series connected mono-crystalline Maxeon Gen II solar cells.
- C. Construction: High Transmission Tempered Anti-Reflective Glass. Class 1 anodized aluminum frame, highest AAMA Rating.
- D. Electrical Connections: Pre-assembled cables and Multi-Contact plugs., Junction box IP-65 Rated
- E. Nominal Dimensions: 61 inches Long, 41 inches wide, 2 Inches thick.
- F. Certifications: UL 1703
- G. Ratings: Module ratings and interconnection as indicated on the drawings.
- H. Minimum Module efficiency of 20.4 percent.
- I. Warranty: Manufacturer's standard combined power output and defect 25 year that includes panel replacement cost and labor.

2.2 STATIC POWER CONVERTER (INVERTER)

- A. MANUFACTURERS: Power One Trio-20.0-TL / Sun Power SPR-2000
- B. Description: Transformerless PWM True Sine Wave Series Power Inverter
- C. Enclosure: Manufacturer's Standard NEMA 4 enclosure.
- D. Compliance: UL 1741, IEEE-519, IEEE-929, IEEE-1547
- E. Protection Circuitry:
 1. Over Voltage
 2. Under Voltage
 3. Thermal
 4. Output Short
- F. AC Output Voltage: 480VAC, 3 Phase, 4 Wire Nominal, 60Hz.

- G. AC Maximum Output Power: As shown or scheduled on the drawings.
- H. DC Input Range: 200-950 VDC
- I. DC Maximum Current: 2X25.0 Amps
- J. Total Harmonic Distortion: Less than 3%.
- K. Peak inverter efficiency: Greater than 97.5 percent.
- L. Ambient temperature rating: -30 Deg C to 60 Deg C.
- M. Minimum 20 year warranty.

2.3 PV ARRAY COMBINER BOX – Not Used

3.0 EXECUTION

3.1 SITE SURVEY

- A. Prior to order and purchase of equipment and materials, contractor shall visit the site with the owner and engineer for final PV Array selection and mounting locations.

3.2 INSTALLATION

A. General:

1. Install all equipment in accordance with manufacturer's recommendations and as required by applicable codes and utility standards.
2. Comply with all marking and signage requirements of the utility and the authority having jurisdiction.

B. Grounding:

1. As indicated on the drawings, maintain a single point, negative grounding system throughout the PV System. Comply with NFPA 70.
2. Bond and ground array frame per manufacturer's recommendations.

C. PV Array Installation:

1. Panels shall be installed using racks, clamps, and mounting brackets suitable for the installation shown on the plans.
2. Installation and hardware shall be able to withstand wind and snow loading typical for the area. Secure all PV panels to the mounting rails on the parking structure canopy. Comply with manufacturer's design recommendations.
3. Interconnect PV Modules for string arrangement as indicated on the drawings.
4. All wiring shall be neatly routed and secured with wire ties to the underside of the array. Wire routing shall be such that maximum protection from the elements is provided.

D. Static Power Converter (Inverter) Installation:

- a. Install Inverter cabinet at location shown on the drawing.
- b. Make connections of DC Power System output to inverter DC Input.
- c. Make connections of Inverter AC output to AC load center as detailed on the drawings.

E. Balance of System Installation:

- d. Install components at locations shown on the drawing.
- e. Make connections as detailed on the drawings.

3.3 ADJUSTING

- A. Adjust work under provisions of Division 1.
- B. Make necessary adjustments and jumper settings for proper operation of the DC system and the Inverter system.

3.4 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Division 1.
- B. Coordinate with Utility for System Interconnection.
- C. System Acceptance Test:
 1. Meet the following owner criteria:
 - a. Clear day with the plane of array irradiance at 800 watts per square meter or greater.
 - b. Contractor to measure and log the following:
 - i. PV Array Open Circuit Voltage (V_{oc})
 - ii. PV Array Short Circuit Current (I_{sc})
 - iii. Inverter DC Input voltage and current.
 - iv. Inverter AC Output voltage, current, and power factor.
 - v. Irradiance, module temperature, and calculated efficiency.
 2. Owner to provide contractor with acceptance form and format.
 3. Irradiance measurement devices to be certified accurate to 5 percent of an Eppley Labs precision spectral pyranometer.
 4. Owner/engineer to witness acceptance test. Schedule at least 14 days in advance.

3.5 OWNER PERSONNEL TRAINING

- A. Provide detailed operation and maintenance instruction and training. Minimum, one four hour session.

- B. Use submitted operation and maintenance manual as reference during training. Supplement with training materials as required.

END OF SECTION

**PRE-ENGINEERED STRUCTURAL PARKING CANOPIES
For SOLAR PANEL INSTALLATIONS**

**PART 1 – GENERAL
PART 2 – PRODUCTS
PART 3 – EXECUTION**

PART 1 – GENERAL

1.01 SCOPE:

- A. This section covers the furnishing and installation of the structures, foundations and all other items required to furnish and install a complete structural system capable of supporting solar panel installations.

1.02 DESIGN CRITERIA AND PERFORMANCE REQUIREMENTS:

- A. Structural framing for the Solar Parking Canopies shall be designed in accordance with all applicable state and local building codes. Manufacturer shall provide written structural analysis prepared and certified by a Professional Engineer licensed in the applicable State indicating that the structures and the foundations satisfy the required design criteria. At a minimum, the structure shall meet the following design criteria:

- a. Dead Load: 8 psf
- b. Roof Live Load: As Required by Code
- c. Snow, Wind and Seismic Loading: As Required by Code

1.03 QUALITY ASSURANCE:

- A. Installation shall be by experienced crews employed by the Solar Canopy Manufacturer having a minimum of five (5) years experience erecting similar structures. The canopies shall be erected in accordance with manufacturer's instructions and approved drawings.
- B. The structure shall be manufactured in accordance with standard approved practices. Testing shall be performed in accordance with ASTM standards, and test reports shall be certified and submitted by an independent test laboratory.

1.04 SUBMITTALS:

- A. Signed and sealed drawings and calculations shall be submitted by the manufacturer prior to manufacturing. No ordering or fabrication of materials shall commence until submittal drawings are approved by the local building authority and the owner.
- B. Manufacturer shall submit three (3) sets of signed and sealed drawings for approval.

- C. The submittal package shall include drawings and engineering calculations signed and sealed by a Professional Engineer licensed in the applicable State in addition to a full equipment submittal.
- D. At a minimum, submittal drawings shall include the following sheets:
 - a. Title/Cover Sheet
 - b. Column Framing Plans
 - c. Structure Elevations
 - d. Truss Framing Details
 - e. Column Anchoring Details
 - f. Gutter Framing Details (if applicable)
 - g. Solar Panel and Framing Plans and Details

1.05 MATERIAL DELIVERY, STORAGE AND HANDLING:

- A. Materials shall be delivered to the jobsite in manufacturer's packaging.
- B. Access from unloading area to construction site shall be clear and unrestricted.
- C. Materials shall be stored in a clean, dry and covered area that is secure and protected from weather.
- D. Upon delivery, inspect and report any freight or handling damage to the manufacturer immediately. Manufacturer cannot be held responsible for damages occurring during storage prior to construction.

PART 2 – PRODUCTS, MATERIALS AND COMPONENTS

2.01 MANUFACTURER:

- A. The manufacturer of the Solar Canopies shall have a minimum of 5 years experience in the design and installation of similar systems.

2.02 GENERAL STRUCTURE DESIGN AND COMPONENT DETAILS:

- A. The structure shall be designed and detailed according to good engineering practice. The Solar Canopies shall be a series of connected solar modules which shall be supported by purlins and trusses. Columns shall be located between parking stall spaces with trusses cantilevered to either side of the column for both aisle and perimeter configurations.
- B. A minimum of clearance of 13'-6" shall be maintained at the lowest point of the canopy truss.
- C. Both aisle and perimeter canopies shall have a nominal roof slope between 0 and 7.5 degrees unless otherwise specified.
- D. Concrete used for foundations shall have a minimum 28-day compressive strength of 4,000 psi.
- E. Reinforcing steel used in the foundations shall be ASTM A615 Grade 60 deformed billet steel.
- F. HSS column sections shall be ASTM A500 Grade B steel tubing with a minimum yield stress of 46 ksi. Plate material used for connections shall be ASTM A36 material. Formed brackets and plates shall be shop welded to the columns. No field welding should be required. Columns shall be shot blasted, e-coated internally and

externally, and powder coated RAL 9018 after fabrication per performance coating specification listed below in Section 2.03.

- G. Truss chords and web struts shall be ASTM A500 steel tubing with a minimum yield stress of 46 ksi. All trusses shall be assembled in the shop. Field assembly of truss components shall not be required. Formed clips for purlin connections shall be welded to the truss top chord. No field welding should be required. Trusses shall be shot blasted, e-coated internally and externally, and powder coated RAL 9018 after fabrication per performance coating specification listed below in Section 2.03.
- H. Purlins shall be ASTM A500 steel tubing with a minimum yield stress of 46 ksi. "C" or "Z" purlins shall not be permitted. Purlins shall be shot blasted, e-coated internally and externally and powder coated RAL 9018 after fabrication per performance coating specification below listed in Section 2.03. Purlins shall be mounted between the truss top chords. Top and bottom of purlins shall be flush with the top and bottom of the truss top chords in order to provide a flat plane for uniform mounting of solar panel racks and to minimize the possibility of birds roosting or nesting. There shall be a maximum clearance of 3/4" between the ends of the purlins and sides of the truss top chords. Purlins shall be bolted to clips on truss top chords with magni coated Grade 5 bolts and AVK threaded inserts. Purlin spacing shall be determined by panel and rack layout. There shall be a minimum of two purlins per PV panel mounted in portrait orientation with respect to the eaves of the canopy. As required, mounting holes shall be provided in purlins to accommodate AVK threaded inserts. Through bolting of purlin shall NOT be permitted.

2.03 DESIGN PERFORMANCE COATING:

- A. The following specification/process for outdoor, exposed parking structures represents the minimum coating standards required to provide an industrial/marine grade finish that is both attractive and durable. As measured by ASTM - B117, the performance coating is designed to provide corrosion resistance that is approximately five to seven times that provided by hot dipped galvanize or conventional coating processes.
- B. The multi-step cleaning/coating procedure is further described below in terms of Metal Preparation, Zn-Phosphate, E-Coat and Powder Coat processes.

C. Metal Preparation Process

- a. All structural components; columns, base plates, trusses and purlins shall be abrasively cleaned after fabrication to a near white metal surface which meets SSPC- SP10 Near-White Blast Cleaning.
- b. The surface profile of the abrasively cleaned shall have a minimum 1.5 mil to 2.5 mil surface profile.
- c. The following testing shall be performed on the product after abrasive cleaning - backside Contamination Tape Test (TM-1); Detection of Chlorides – Paper Test (TM-3A); and Copper Sulfate Test (TM-4).

D. Layer 1 – Zinc Phosphate Coating

- a. All structural components; columns, base plates, trusses and purlins shall have 150 to 500 milligrams per square foot weight coating of Zinc Phosphate on all internal and exterior surfaces. Upon submersion into the Zinc Phosphate solution, interior and exterior surfaces including small crevices are coated.

E. Layer 2 – Electro-Deposition Coating

- a. All structural components; columns, base plates, trusses and purlins shall have 0.6 mils to 1.2 mils electro-deposition epoxy coating. Electro-deposition of epoxy shall be performed in a tank with the component completely submersed providing protection to both the internal and external surfaces. Layers one and two shall be accomplished using a twelve stage electro-deposition process.

F. Layers 3 and 4 – Double Coat of TGIC Superdurable Polyester Powder Coating

- a. All structural components; columns, base plates, trusses and purlins shall receive a double coat of TGIC Superdurable Polyester Powder Coating. The poles shall have 6 mils to 10 mils of Powder Coating dry film thickness followed by oven cure.

B. Physical/Corrosion Properties and Film Physical Properties:

Property	Test Method	Performance
Electro-Deposition Color	-----	Green
Film Thickness	Digital Gage	0.6 - 1.0 mils
Pencil Hardness	ASTM D3363	2H+
Direct impact	ASTM D2794	Pass 120 in/lbs
Reverse Impact	ASTM D2794	Pass 100 in/lbs
Cross-Hatch Adhesion	ASTM D3359	4B - 5B
Humidity	ASTM D1735	1000 Hrs +
Water Immersion	ASTM D870	240 Hrs +

SEDONA SERIES SURFACE/CEILING/GARAGE NEW	Cat.#	
	Job	
Approvals		

SPECIFICATIONS

Intended Use:

Ceiling applications from eight to eighteen feet for surface, box or pendant mount. Applications include parking garage, walkway or building canopies, corridors, tunnels, large stairwells and other interior applications with ambient 40°C. A wide range of lumen packages and optical distributions are available making the SCP Series luminaire both versatile and functional.

Construction:

- Vertically finned cast aluminum housing for maximum heat dissipation ensuring long component life and luminaire performance
- Separate hinged optical and electrical compartments for optimum component operation and easy installation, maintenance; Three HubbellGard® screws allow positive seal of the two housings to a silicone gasket
- One piece molded silicone gasket ensures weather proof seal around each individual LED; Stamped bezel provides mechanical compression to seal the optical assembly
- IP-65 luminaire rating
- Vandal resistant polycarbonate shield accessory available

Optics/Electrical

LED:

Three lighting distributions are standard: Type V square, Type V rectangle and Type IV forward throw. Each LED has individual optical grade PMMA acrylic lens to ensure repeatable photometrics and enhanced performance. The SCP's hexagonal honeycomb LED cluster design provides optical flexibility and light level scalability from a compact luminaire. The design's overlapping redundant patterns of light ensure consistent light level uniformity regardless of the unit being in a dimmed mode or number of LEDs illuminated

- CCT: 4200K (CRI 70) or 5100K (CRI 67)

- Lumens packages ranging from 3,700 – 8,600 from 18-36 LEDs
- 10KVA surge suppressor is standard to protect the electrical package from transient voltage spikes
- Thermal compensation management
- Wattage: 43 - 86
- Lumens per watt: >92-100
- Designed for 40° C ambient temperatures
- Minimum operating temperature is -30°C/-22°F

Controls:

Drivers are 0-10V dimming standard. Occupancy, photocell, and wiHUBB wireless controls available for complete on/off and dimming operation.

Installation:

The top housing of Sedona allows mounting directly to the ceiling to standard junction boxes or by ¾" pendant stems, making the fixture adaptable for virtually any application. Each mounting can be accomplished while maintaining a watertight seal. Four ½" conduit hubs allow side access as required. A pattern indicator on the inside of the housing allows the installer to properly orient the fixture without energizing the light engines.

The light engine housing contains hook and hinge pin to the upper housing allowing hands free installation.

Listings:

Listed to UL 1598 for use in wet locations, 40° C ambient environments; Meets DesignLights Consortium (DLC) qualifications; IP65

Warranty:

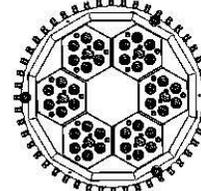
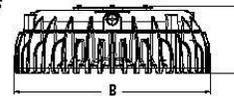
Five year limited warranty (for more information visit: <http://www.hubbelloutdoor.com/resources/warranty/>)

PRODUCT IMAGE(S)



Shown with wiHUBB

DIMENSIONS



A	B	Weight:
4.85"	14.00"	16 lbs
(123.19 mm)	(355.6 mm)	7.27 kg

CERTIFICATIONS/LISTINGS



ORDERING INFORMATION

ORDERING EXAMPLE: SCP-36LU-5K-5M-GR-PC1

SCP	-		-		-		-	
SERIES	NUMBER OF LEDS	VOLTAGE	CCT	IES DISTRIBUTION	FINISH	OPTIONS		
SCP Sedona surface/ceiling/garage luminaire	18L 18 LEDs, 4.3w input 24L 24 LEDs, 5.7w input 36L 36 LEDs, 8.6w input	U 120-277V 1 120V 2 208V 3 240V 4 277V 5 480V F 347V	4K 4200K nominal, 70 CRI 5K 5100K nominal, 67 CRI	5M Type V Square 5R Type V Rectangle 4 Type IV	DB Bronze BL Black WH White PS Platinum Silver GR Gray	PC(X) ¹ Button photocontrol, replace X with voltage, specify 1-120V, 2-208V, 3-240V, 4-277V, 6-347V WIH ¹ In fixture wireless control, consult factory F(X) ¹ Fusing 1-120V, 2-208V, 3-240V, 4-277V, 6-347V		
ACCESSORIES - Order separately								
Catalog Number	Description							
SCP-SPC	Vandal shield							
SCP-BS-XX ²	Bird shield							
SCP-CS	Comfort shield - Reduces source brightness and imagining P.95 acrylic with nominal 24% lumen reduction							
MOTION CONTROL OPTIONS								
SCO ¹ On/Off control - No light output when no motion detected								
SCP ¹ High/low control - user programmable settings; Factory default is 50%								

See page 3 for Accessories. *XX = Color Options: DB, BL, WH, PS and GR

¹Consult factory when combining control options



HUBBELL Outdoor Lighting

Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000

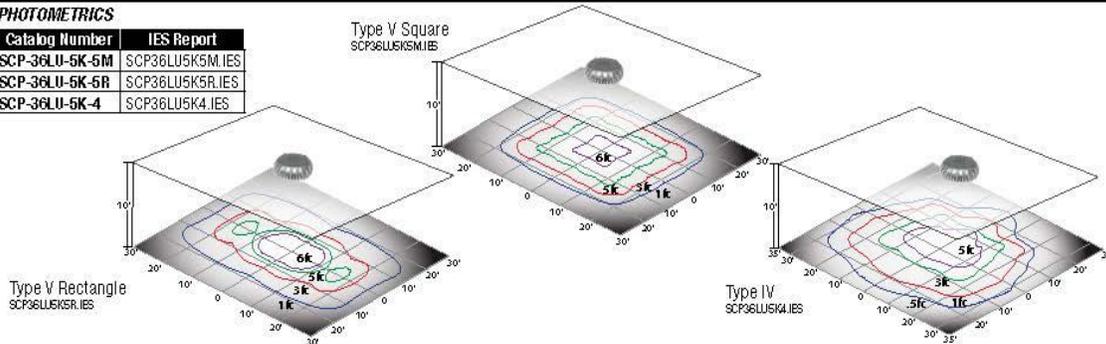
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

© 2014 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA

SEDONA-SPEC 1/14

PHOTOMETRICS

Catalog Number	IES Report
SCP-36LU-5K-6M	SCP36LU5K5M.IES
SCP-36LU-5K-5R	SCP36LU5K5R.IES
SCP-36LU-5K-4	SCP36LU5K4.IES



PERFORMANCE DATA

# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	5K (5100K nominal, 67 CRI)					4K (4200K nominal, 70 CRI)				
				LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G
18	STD. (700 MA)	43W	4	4001	93	1	0	2	3834	89	1	0	1
			5M	4102	95				3835	89			
			5R	4298	100				4020	93			
24		57W	4	5360	94	1	0	2	4986	87	1	0	2
			5M	5485	96	2	0	1	5012	88	2	0	1
			5R	5800	102	3	0	3	5375	94			
36	86W	4	7966	93	1	0	2	7522	87	1	0	2	
		5M	8203	95	3	0	1	7439	87	3	0	1	
		5R	8604	100	3	0	3	8030	93				

¹Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	TM-21-11 60,000	100,000	Calculated L70 (HOURS)
10°C / 50°F	1.01	1.00	0.99	0.99	0.97	>1,085,000
25°C / 77°F	1.00	0.99	0.98	0.98	0.96	>1,085,000
40°C / 104°F	0.99	0.98	0.96	0.96	0.94	>706,000

¹ Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the SCP-36LU-5K base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
18	1	STD. (700mA)	120	43	0.36
			277	45	0.20
			347	43	0.13
			480	43	0.11
			120	57	0.48
24	2		277	59	0.24
			347	56	0.17
			480	57	0.13
			120	86	0.73
			277	89	0.35
36	3	347	84	0.25	
		480	85	0.20	

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE	LUMEN MULTIPLIER	
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

Use these factors to determine relative lumen output to average ambient temperatures from 0-50°C (32-122° F).



Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

© 2014 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA

SEDON-SPEC 1/14

<h1>LAREDO SERIES</h1> <p>LNC2</p>	Cat.#		
	Job	Type	
			Approvals

SPECIFICATIONS

Intended Use:

The compact Laredo LED LNC2 is designed for perimeter illumination for safety, security and identity. This compact fixture has no uplight and is neighbor friendly with typical mounting height of 12-15ft. Units are supplied with an acrylic diffuser accessory that can be used for lower LED brightness near building entrances or other pedestrian areas. Units have protective polyester finish for long lasting appearance.

Construction:

Decorative die-cast aluminum housing protects components and provides an architectural appearance. Casting thermally conducts LED heat to provide optimum performance and long life. Powder paint finish provides durability in outdoor environments.

Optics/Electrical:

Class 2 electronic drivers (single in 12L units and dual in 18L units) feature 120-277V, 50/60 Hz input for universal usage with >90% power factor and <20% Total Harmonic Distortion (THD), 0-10V dimming 120-277V only.

LED(s) CCT:

3000K CCT nominal – 80 CRI, 4200K CCT nominal – 70 CRI, 5100K CCT nominal – 67 CRI

29 input watts, 12 LEDs deliver 2420 lumens with 85 LPW efficiency at 5100K CCT

45 input watts 18 LEDs deliver 3311 lumens at 78 LPW efficiency at 5100K CCT

Minimum operating temperature is -40°C/-40°F

Optical:

Cut-off Type III and IV distributions with individual PMMA acrylic lenses for wide lateral throw, maximum control and efficiency. Acrylic diffuser included where reduced LED brightness is desired.

Lumen Maintenance:

L96 at 60,000hrs (Projected per IESNA TM-21-11), see table on page 2 for all values.

Installation:

Quick-mount adapter provides easy installation to wall or to recessed junction boxes (4" square junction box). Gasket seal and secured by two Allen-head hidden fasteners for tamper resistance. Designed for direct j-box mount or conduit feed in single SKU.

Listings:

- DLC Qualified, Consult DLC website for more details: <http://www.designlights.org/DPL>
- Listed to UL 1598 for use in wet locations, 40° C ambient environments, 25°C for 347V.

Options:

Button photocontrol for dusk to dawn energy savings

Warranty:

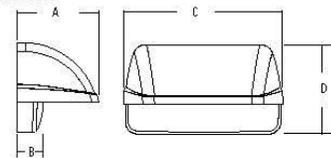
Five year limited warranty (for more information visit: <http://www.hubbelloutdoor.com/resources/warranty/>)

- IES Progress Award Winner - 2013
- Building Operating Management 2014 Top Products Award - LNC2-18LU

PRODUCT IMAGE(S)



DIMENSIONS



A	B	C	D	Weight
6.25"	1.6"	10.25"	5.6"	7.0 lbs.
158.7 mm	40.2 mm	260.4 mm	142.2 mm	3.2 kg

SHIPPING INFORMATION

Catalog Number	G.W(kg)/CTN	Carton Dimensions			Carton Qty. per Master Pack
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)	
LNC2-12LU	14.3 (6.5)	14.5 (37)	11.4 (29)	8.4 (21.5)	2
LNC2-18LU	14.8 (6.7)	14.9 (38)	11.4 (29)	8.4 (21.5)	2

CERTIFICATIONS/LISTINGS



ORDERING INFORMATION

ORDERING EXAMPLE: LNC2-12LU-5K-3-1

LNC2	-	[]	-	[]	-	[]	-	[]
SERIES	NUMBER OF LEDS/SOURCE/VOLTAGE	CCT	IES DISTRIBUTION	FINISH	OPTIONS			
LNC2 Laredo LNC2	12LU 12 LEDs, 29w input, Universal voltage 120-277V 18LU 18 LEDs, 45w input, Universal voltage 120-277V	3K 3000K nominal 80 CRI 4K 4200K nominal 70 CRI 5K 5100K nominal 67 CRI AM1 Amber (590 µm available for "Turtle Friendly"/observatory applications, 350 mA (consult factory))	3 Type III 4 Type IV	1 Bronze 2 Black 4 White 5 Platinum	PC(X) Button photocontrol, replace X with voltage, specify 1-120V, 2-208V, 3-240V, 4-277V			

1 Amber LEDs only available on 18LU configurations, 350 mA only. Universal Voltage 120V-277V

REPLACEMENT PART

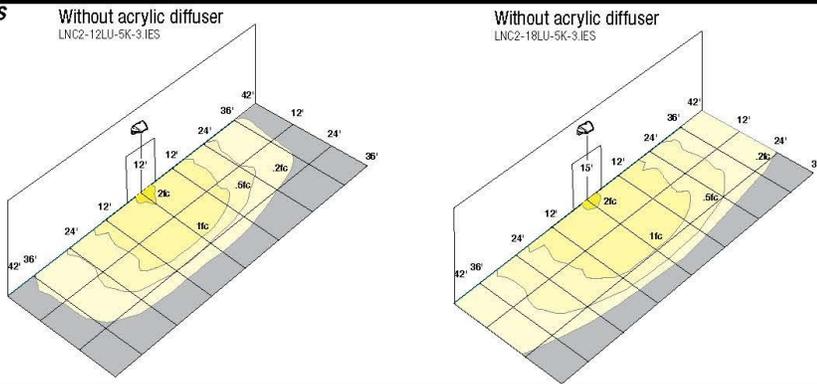
CATALOG NUMBER	DESCRIPTION
93044013	Frosted comfort shield, improved uniformity with only 5% reduction



Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000
 Due to our continued efforts to improve our products, product specifications are subject to change without notice.
 © 2014 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA

LAREDO LNC2-SPC 3/14

PHOTOMETRICS



PERFORMANCE DATA

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5100K nominal, 67 CRI)					4K (4200K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
				LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G
12	STD. (700mA)	28.6w	3	2420	85	1	0	1	2246	79	0	0	1	1824	64	0	0	1
			4	2485	87	0	0	1	2291	80	0	0	1	1776	62	0	0	1
18		44.5w	3	3311	74	1	0	1	3069	69	1	0	1	2522	57	1	0	1
			4	3602	81	1	0	1	3225	72	1	0	1	2518	57	0	0	1

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

PROJECTED LUMEN MAINTENANCE

Ambient Temp.	OPERATING HOURS					
	0	25,000	50,000	TM-21-11 ¹ L96 60,000	100,000	L70 (hours)
25°C / 77°F	1.00	0.98	0.97	0.96	0.95	>791,000
40°C / 104°F	0.99	0.98	0.96	0.96	0.94	>635,000

1. Projected per IESNA TM-21-11 * (Nichia 219B, 700mA, 85°C Ts, 10,000hrs)
Data references the extrapolated performance projections for the LNC-12LU-5K base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

ELECTRICAL DATA

# OF LEDS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (w)
12	STD. (700mA)	120	0.25	28.6
		277	0.11	28.6
18		120	0.37	44.5
		277	0.18	44.5



Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

© 2014 HUBBELL OUTDOOR LIGHTING. All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA

LAR EDO LNC2-SPEC 3/14

LIGHTING FACTS

LNC2-12LU-4K-3

Hubbell Outdoor Lighting
lighting facts
 A Program of the U.S. DOE

Light Output (Lumens)	2186
Watts	28.61
Lumens per Watt (Efficacy)	76

Color Accuracy Color Rendering Index (CRI)	76
---	----

Light Color
Correlated Color Temperature (CCT) **4020 (Bright White)**

Warm White 3000K Bright White 4000K Daylight 5000K 6500K

Warranty** Yes

All results except LED Lumen Maintenance are according to IESNA LM-79-2009. Approved Method for the Electrical and Photometric Testing of Solid State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

** See www.lightingfacts.com/products for details.

Registration Number: A29K-YAUBZ8 (11/14/2012)
 Model Number: LNC2-12LU-4K-3
 Type: Outdoor wall pack

LNC2-18LU-4K-3

Hubbell Outdoor Lighting
lighting facts
 A Program of the U.S. DOE

Light Output (Lumens)	3011
Watts	44.63
Lumens per Watt (Efficacy)	67

Color Accuracy Color Rendering Index (CRI)	76
---	----

Light Color
Correlated Color Temperature (CCT) **4020 (Bright White)**

Warm White 3000K Bright White 4000K Daylight 5000K 6500K

Warranty** Yes

All results except LED Lumen Maintenance are according to IESNA LM-79-2009. Approved Method for the Electrical and Photometric Testing of Solid State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

** See www.lightingfacts.com/products for details.

Registration Number: A29K-LMND0R (11/14/2012)
 Model Number: LNC2-18LU-4K-3
 Type: Outdoor wall pack

LNC2-18LU-5K-3

Hubbell Outdoor Lighting
lighting facts
 A Program of the U.S. DOE

Light Output (Lumens)	3306
Watts	44.51
Lumens per Watt (Efficacy)	74

Color Accuracy Color Rendering Index (CRI)	70
---	----

Light Color
Correlated Color Temperature (CCT) **5060 (Daylight)**

Warm White 3000K Bright White 4000K Daylight 5000K 6500K

Warranty** Yes

All results except LED Lumen Maintenance are according to IESNA LM-79-2009. Approved Method for the Electrical and Photometric Testing of Solid State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

** See www.lightingfacts.com/products for details.

Registration Number: A29K-M65810 (11/14/2012)
 Model Number: LNC2-18LU-5K-3
 Type: Outdoor wall pack



HUBBELL
Outdoor Lighting

Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000
 Due to our continued efforts to improve our products, product specifications are subject to change without notice.

© 2014 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA

LARE01LNC2-SPEC 3/14

Living Wage Ordinance

Ordinance Number §28-1-28-1.12DSFCC 1987

Purpose:

The City of Santa Fe Living Wage Ordinance was adopted to establish minimum hourly wages.

Who it affects:

- All profit and nonprofit businesses required to have a business license or business registration with the City of Santa Fe.

Compliance:

- Affected businesses are required to pay employees an hourly wage of \$10.66 effective March 1, 2014.
- Beginning January 1, 2009, and each year thereafter, the minimum wage shall be adjusted upward by an amount corresponding to the previous year's increase, if any, in the Consumer Price Index for the Western Region for Urban Wage Earners and Clerical Workers.
- For workers who customarily receive more than \$100 per month in tips or commissions, any tips or commissions received and retained by a worker shall be counted as wages and credited toward satisfaction of the minimum wage provided that, for tipped workers, all tips received by such workers are retained by the workers, except that the pooling of tips among workers shall be permitted.
- The value of health care benefits and child care shall be considered as an element of wages.
- Nonprofit organizations whose primary source of funds is from Medicaid waivers are *exempt*.

Prohibitions against retaliation and circumvention:

- It shall be unlawful for any business, employer or employer's agent or representative to take any action against an individual in retaliation for exercising or communicating rights under this ordinance. This includes retaliation against individuals who mistakenly but in good faith allege noncompliance with the ordinance.
- Taking adverse action against an individual within 60 days of the individual's assertion of or communication of information regarding rights raises a reputable presumption of retaliation for assertion of rights.
- It shall be unlawful for any business or employer to intentionally circumvent the requirements of this ordinance by contracting portions of its operations or leasing portions of its property.

Enforcement and Remedies:

- Administrative Enforcement—The city manager, or his/her designee, is authorized, as appropriate and as resources permit, to enforce this ordinance.
- Criminal Penalty—A person violating this ordinance shall be guilty of a misdemeanor and, upon conviction, for each offense may be subject to fines and imprisonment as set forth in Section 1-3 SFCC 1987. A person violating any of the requirements of this ordinance shall be guilty of a separate offense for each day or portion thereof and for each worker or person to whom any such violation occurred.
- Other Remedies—The city, any individual aggrieved by a violation of this ordinance, or any entity the members of which have been aggrieved by a violation of this ordinance, may bring a civil action in a court of competent jurisdiction to restrain, correct, abate or remedy any violation of this ordinance and, upon prevailing, shall be entitled to such legal or equitable relief as may be appropriate to remedy the violation including, without limitation, reinstatement, the payment of any wages due and an additional amount as liquidated damages equal to twice the amount of any wages due, injunctive relief, and reasonable attorney's fees and costs.

Nonexclusive Remedies and Penalties—The remedies provided in this section are not exclusive, and nothing in this ordinance shall preclude any person from seeking any other remedies, penalties, or relief provided by law.

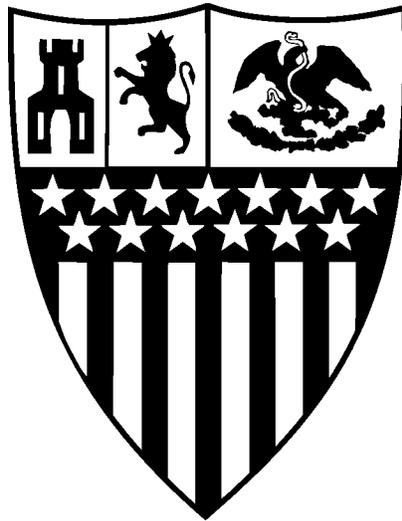
Posting and Publication:

- Any business subject to the provisions of this ordinance shall as a condition to obtaining and holding a City of Santa Fe business license or registration, post and display in a prominent location next to its business license or registration on the business premises a notice, in English and Spanish, that the business is in compliance with the provisions of this ordinance and post the text of this notice. Failure to comply with this section shall be construed a violation of this ordinance and, in addition, shall be considered grounds for suspensions, revocation, or termination of the business license or registration.

For more information, please contact: Constituent Services at 505-955-6949 Email: constituentservices@santafenm.gov

EXHIBIT IV– Public Utilities Department Water Division Construction Standards and Specifications

City of Santa Fe



Public Utilities Department Water Division Construction Standards and Specifications

Rev. January 2014

**City of Santa Fe
Public Utilities Department
Sangre De Cristo Water Division
Construction Standards and Specifications**

Table of Contents

SECTION A	General Provisions
SECTION B	Installation of Water Mains and Services
SECTION C	Approved Materials List
STANDARD DETAILS	Drawings 01 - 26

**SECTION A
GENERAL PROVISIONS**

A.1 Referenced Construction Specifications and Construction Drawings: The following specifications and drawings shall be included as a part of these specifications by this reference:

1. SDCW Approved Standard Detail Drawings (These drawings are located at the end of this document.)
2. American Water Works Standard Specifications (AWWA Specifications), latest published revision.
3. New Mexico Standard Specifications for Public Works Construction.
4. New Mexico Department of Transportation Standard Specifications for road and bridge construction (NMDOT Specifications), latest published revision.
5. ASTM Standards
6. The following SDCW Construction Specifications shall take precedence over referenced specifications in items #1 - #4 above.

A.2. Developer Construction: Developer installed public water distribution system improvements shall be done in accordance with the *Agreement to Construct and Dedicate Public Improvements* requirements. The developer and the developer's contractor are responsible for completing work in accordance with these specifications. The developer and the developer's contractor shall be referred to herein as the Contractor for developer installed public water distribution systems. The term Owner as used in this document refers to the Developer.

A.3 Access to Inspection: All construction work shall be monitored by SDCW's Supervising Engineer or designated representative for strict compliance with all applicable specifications, codes and standards. Contractor shall provide access to all water system facilities for inspection purposes and notify SDCW's Supervising Engineer prior to commencing work. Contractor shall notify SDCW 24 hours in advance of work to be performed outside normal working hours.

Failure to provide proper access for inspection of work or to notify SDCW of work to be performed after normal working hours shall result in said work being unacceptable to SDCW until complete access and inspection is made. Contractor shall give the supervising engineer a 24 hour advance notice of overtime work scheduled. SDCW will provide overtime inspection as agreed by the supervising engineer in such instances where the overtime work is required for convenience or necessity of the public. Overtime inspection shall not be done solely for the Contractor's convenience.

Any overtime work shall be inspected by SDCW on the following regular work day, in cases where SDCW does not provide overtime inspection.

A.4 Interference with Service and Schedule of Work: Contractor shall be required to arrange his construction schedule with the intent of maintaining continuous service to SDCW users to the fullest extent possible from existing facilities. No outage shall exceed 4 hours unless coordinated directly with the SDCW. Should a conflict between the contract work and service occur, Contractor shall, as directed by the supervising engineer, discontinue the work.

Contractor shall have SDCW approval for any water shutoff and connections to existing mains prior to the scheduling of any construction. Contractor shall distribute shutoff notices to the general public as necessary. Contractor shall not operate an existing SDCW valve or fire hydrant unless specifically authorized to do so and such operation shall be under the direction of SDCW on site personnel.

Contractor may be required to do work outside of normal working hours if SDCW deems it necessary for the convenience of SDCW's customers and the general public. When the Contractor is required to shutoff existing waterline to perform any wet connections, Contractor shall, as directed by SDCW, notify each affected customer no less than 48 hours in advance of the anticipated service interruption. SDCW will provide forms detailing the information to be provided to affected customers. Also, Contractor and SDCW shall determine when shutoff will be made so that a notice may be placed in the local newspaper by SDCW. These actions shall be taken to give the water users ample time to arrange for a temporary supply of water.

A.5 Construction Water: Construction water shall be used in accordance with current City water ordinances. Contractor shall be required to pay for all potable and non-potable water used for construction purposes. If existing water of satisfactory quality for the construction needs can be found from other than the SDCW source, Contractor may obtain his water from that source.

A.6 Protection of Utilities and Property: During performance of the work, Contractor shall protect all utilities and property from damage. All utilities shall be spotted prior to any excavation work by Contractor. Contractor shall call New Mexico One Call (811), and request utilities' locations forty-eight (48) hours prior to excavation in accordance with New Mexico One Call operating procedures.

The Contractor shall attempt to locate sewer laterals and other private service lines. Contractor shall contact property owners prior to construction and request location information. Any sewer laterals cut during excavation shall be repaired by Contractor at no additional cost to SDCW. Payment for repair of sewer service laterals shall be considered paid in the Construction price for water pipe in place.

A.7 Barricades and Signs: Any signs used by Contractor during performance of work shall conform to the Manual of Uniform Traffic Control Devices.

A.8 Work in Streets Right-of-Way: All of Contractor's construction work in street rights of way shall be done in strict accordance with the applicable controlling public agency's construction specifications, rules, regulations ordinances.

Contractor shall coordinate with the proper public officials and receive approval from said officials prior to any street closing or detouring required due to the work to be performed. Permit costs are considered incidental and included as part of placing of pipe

A.9 Maintenance of Traffic: Contractor shall maintain traffic flow(s) and accessibility to private property(s) as close to normal condition as possible. Contractor shall notify residents, city and state officials, as appropriate, of any driveway or road closure.

A.10 Environmental Issues: The Contractor's obligation to obey any environmental laws or standards is not limited by the following items.

A.10.1 Protection of Vegetation: Contractor shall protect existing vegetation from removal or damage wherever possible. Contractor shall confine construction work to specified construction limits as shown on the drawings or defined in the specifications. Should Contractor damage or remove any vegetation outside

the construction limits, Contractor shall restore the affected area to its original state at no expense to SDCW or the Owner.

A.10.2 Revegetation of Disturbed Areas: Within the City of Santa Fe municipal boundary, Contractor shall revegetate as required by City of Santa Fe Ordinances.

A.10.3 Archaeological/Cultural Permits: Contractor shall not commence excavations within the City of Santa Fe without a permit issued by the Santa Fe Planning Department.

A.10.4 Slope Protection: Contractor shall comply with the conditions of the City of Santa Fe's Terrain Management Ordinance, where applicable.

A.10.5 Water Conservation: Contractor shall use reasonable effort to conserve water during construction. Based on drought or other conditions, SDCW may require Contractor to use effluent water, collect flushing water for reuse, or other water conservative construction methods.

A.10.6 Separation between Water and Sewer: Parallel water and sanitary sewer lines must be placed at least ten (10) feet apart horizontally, and the water line must be at a higher elevation than the sewer. If it is impossible to meet these criteria, the water and sewer will be placed in separate trenches at a horizontal separation approved by the SDCW supervising engineer, and the water line shall be at least two (2) feet above the sewer. When water and sewer lines cross each other, the water line shall be at least two (2) feet above the sewer.

A.11 Soil Testing: Testing for soil compaction requirements, proctor analysis, and any other material testing shall be done by a testing lab with all material testing to be certified by a professional engineer registered in the State of New Mexico. Test locations and intervals shall be at the direction of SDCW and shall be Contractor's responsibility to also comply with all testing necessary for all work done in public right-of-way per the controlling agency's requirements. A copy of all testing shall be mailed from the testing lab directly to SDCW and the Owner. The cost of material testing shall be incidental to the pipe laying bid items.

A.12 Work in Railroad Right-of-Way: Contractor shall not work within railroad right-of-way without a license issued by the railroad owning the right-of-way. All work done by the Contractor shall comply with the requirements of the license.

A.13 Work in NMSH&TD Right-of-Way: All construction work in NMSH&TD right-of-way shall be done in strict accordance with applicable NMSH&TD requirements as specified in *Right of Way Manual, Railroad and Utility Unit*. Traffic signs, warnings, and barricades, shall be provided by Contractor and shall conform to NMSH&TD requirements. Work within NMSH&TD construction projects shall meet all applicable project specifications and requirements.

A.14 Restoration of Unpaved Driveways and Streets: Unsurfaced and gravel surfaced driveways and streets shall be left in the same or better condition as they existed prior to construction. Grading shall be done with the appropriate type of grading equipment. Payment for gravel surface replacement shall be limited to a maximum width of the trench width plus eight feet. Any necessary surface replacement and grading outside of the trench width plus eight feet shall be made by Contractor at no expense to SDCW or the Owner. Easement areas shall be graded to match existing contours.

A.15 Certificate of Compliance: A Certificate of Compliance shall be furnished to SDCW and the Owner by Contractor for all material that has specification requirements listed in the contract or as directed by the supervising engineer. Certificate of compliance shall be signed and notarized by the material manufacturer stating that the material supplied for Work under the contract meets all required specifications.

A.16 Safety Standards: The contractor shall have a documented safety program and shall have a designated safety officer to provide safety surveillance for work performed on the SDCW water system. The contractor shall ensure that all subcontractors comply with the safety provisions. The contractor's safety program shall include all necessary training, personal protective equipment, and other safety equipment and procedures necessary for all type of work performed on the SDCW water system.

SECTION B
INSTALLATION OF WATER MAINS AND SERVICES

B.1 General: Construction of public water mains for the SDCW system will be in accordance with the New Mexico Standard Specifications for Public Works Construction published by the New Mexico Chapter of the American Public Works Association except as noted below. The SDCW specifications take precedence over the APWA specification in the event of any conflict between the two documents. The DEVELOPER is responsible for obtaining a copy of the APWA specifications.

B.2 APWA Section 701 - Trenching, Excavation and Backfill: Section 701 of the APWA specifications will be used with the following exceptions:

Section 701.8: REMOVAL OF EXISTING PAVEMENT, SIDEWALK, AND DRIVEWAY: The CONTRACTOR is responsible for obtaining any required pavement cutting permits. All pavement cuts shall conform to the requirements imposed by the pavement cut permits issued for the job.

Section 701.11.4: BLASTING: Replace this sentence: "Blasting shall be under the supervision of a person qualified and experienced in the use and handling of explosives." with: "Prior to any blasting, CONTRACTOR shall submit a Santa Fe County Blasting permit application to SDCW and shall obtain any applicable Santa Fe County or City permits."

Section 701.13.3.4: Delete this section and replace with: "The CONTRACTOR shall utilize acceptable native material in the embedment zone in conformance with these specifications. No additional compensation for importing a different material for the embedment zone will be allowed. The CONTRACTOR shall utilize acceptable native material in the compacted fill above the embedment zone in conformance with these specifications. Additional compensation for importing a different material for the compacted fill above the embedment zone will only be allowed if the native material is Class IV, Class V or rock."

Section 701.14.1: Organic materials such as wood, roots, etc. are also excluded from final backfill.

Section 701.14.2: Delete this section and replace with: "Final backfill shall be compacted as shown on the APWA utility trenching details unless otherwise specified in the contract documents or road cut permit."

Section 701.15.4: Add the following to the end of this section: "For each lift of backfill, compaction tests will be taken as directed by SDCW. At a minimum, tests will be required 300 feet apart along pipe centerline at each 2 foot depth interval. Tests will be staggered horizontally from tests taken at lower lifts. The testing frequency must meet the requirements of the agency responsible for maintaining the road."

Section 701.17.3: Add the following to the end of this section: "No additional payment will be made for excavation or blasting beyond the specified limits of the trench configuration."

Section 701: Add this section: "Exploratory digging shall only be performed with written authorization from the SDCW supervising engineer. Exploratory digging shall not be used for any type of work that is ordinarily a part of normal construction (i.e. locating existing utilities in advance of trenching and pipe laying, etc.)."

Section 701: Add this section: "The supervising engineer must issue written approval authorizing the use of imported backfill outside the pipe embedment zone prior to use. The contractor shall submit Proctor Test analysis showing import material suitability prior to placement."

B.3 APWA Section 710 - Boring, Drilling and Jacking: Section 710 of the APWA specifications will be used with the following exceptions:

Section 710.3.1: Delete the last sentence in this section and replace with "The allowable tolerance as to grade and alignment of the installed casing shall not exceed 2 inches per hundred feet of casing length or as approved by SDCW based on site conditions."

Section 710.3.2: Redwood skids are not acceptable. CONTRACTOR shall use prefabricated casing spacers shown on the Approved Materials List and install in accordance with SDCW Standard Detail Drawings.

Table 710.4.2: Replace with the following table:

CASING SIZE VERSUS CARRIER SIZE

Carrier Pipe (Nominal Size)	Steel Casing Diameter and Wall Thickness
6"	14" Schedule 30
8"	16" Schedule 30
10"	18" Standard Class
12"	22" Standard Class
14"	26" Schedule 20
16"	28" Schedule 20
20"	30" 0.375" Wall
24"	36" 0.375" Wall
3/4"-2" Cu Tubing	4" Schedule 40 PVC
3/4"-2" Cu Tubing	4" Schedule 40 Steel

B.4 APWA Section 801 - Installation of Water Transmission, Collector, and Distribution Lines:
Section 801 of the APWA specifications will be used with the following exceptions:

Section 801.2: Add the following references: AWWA C905, latest revision.

Section 801.3.1.2: Delete this section (U.S. material preference)

Section 801.3.2.2: Delete this section and replace with the following: "CONTRACTOR shall install the pipe material shown on the SDCW construction drawing."

Section 801.3.2.3: Delete the following sentence: "All pipe shall be of domestic manufacture and origin."

Section 801.3.4.8: CONTRACTOR will use the SDCW valve card to meet the requirement of this section.

Section 801.3.7.1: Delete "National Standard Fire Hose Coupling Screw Threads" and replace with "Santa Fe Fire Department Standard Screw Threads shall be furnished unless SDCW construction drawings specify National Standard Fire Hose Coupling Screw Threads." Also, normal bury depth for SDCW is 4 1/2 to 5 feet unless field conditions require a deeper bury.

Section 801.3.7.5: Add this section: "Repaint the fire hydrant bonnet with Wellborn Traffic Yellow, Sherwin Williams Utility Yellow, or SDCW approved equivalent paint. CONTRACTOR shall apply fire hydrant number decal to match the fire hydrant number assigned on the SDCW construction drawing using decals provided by SDCW."

Section 801.3.8 PRESSURE REDUCING VALVE: Delete this section. PRV valve requirements will be shown on the SDCW construction drawing.

Section 801.3.9 TAPPING SLEEVES: Tapping sleeves will be as shown in SECTION C, Approved Materials.

Section 801.4 WATER VALVE DATA CARD: Delete the water valve data card shown in the APWA specifications and use the water valve data card attached to these specifications.

Section 801.5 FIRE HYDRANT DATA CARD: Delete the fire hydrant data card shown in the APWA specifications and use the fire hydrant data card attached to these specifications.

Section 801.7.1 Add the following to the end of this section: "See the SDCW Standard Detail Drawings for storm drain and other pipe crossing requirements."

Section 801.8.1: The minimum cover over SDCW pipe shall be 4 feet or as shown on the SDCW project drawing.

Section 801.9.3: Add the following to the end of this section: "End(s) of the pipe(s) shall be covered at all times except during actual work on the pipe."

Section 801.9.5: Add the following to the end of this section: "Changes in horizontal or vertical alignment from the drawings or field staking shall be made only when approved by the Engineer."

Section 801.9.10: Add this section: Trace wire shall be installed on all water mains and appurtenances. The wire shall be installed in such a manner as to be able to properly trace all pipelines and services without loss or deterioration of signal or without the transmitted signal migrating off the tracer wire. An insulated 12 gauge copper wire shall be laid along with the pipe in accordance with SDCW specifications. The color of the wire shall be blue. This continuous conductor wire shall be laid with terminations at terminal boxes, valve boxes, fire hydrants, or meter cans as directed by the SDCW representative.

Trace wire shall be installed in the same trench and inside bored holes and casing with pipe during pipe installation. It shall be secured to the pipe as required to insure that the wire remains adjacent to the pipe. The trace wire shall be securely bonded together at all wire joints with an approved watertight connector to provide electrical continuity, and it shall be accessible at all trace wire access points.

Except for approved spliced-in repair or replacement connections, tracer wire shall be continuous and without splices from each trace wire access point.

Trace wire access points shall be accessible at all new water valve boxes, water meter boxes, blowoffs, ARVs, fire hydrants, irrigation turnouts and access manholes. Concentrations of multiple proposed valves near pipe intersections, i.e. tees or crosses, may require more than one access point assembly in each concrete valve box collar. Trace wire access points shall be within public right-of-way or public utility easements.

If the spacing of valves and meters is greater than one-half (1/2) mile, the trace wire shall be looped up in a 2" PVC pipe to be located at a right-of-way fence line or at a cross fence line, as applicable, for protection. A PVC cap shall be placed on the 2" pipe when used, but it shall not be solvent welded onto the pipe.

At the point of connection between ductile iron water mains, with any non-iron water main, the tracer wire shall be properly connected to the iron pipe with a cad weld or approved equivalent. Tracer wire welds shall be completely sealed with the use of an approved mastic type sealer specifically manufactured for underground use. Mastic shall be applied in a thick coat a minimum of one quarter inch (1/4") thick and shall be protected from contamination by the backfill material with the use of a plastic membrane.

Tracer wire shall be laid flat and securely affixed to the pipe at 10 foot intervals. The wire shall be protected from damage during the execution of the works. No breaks or cuts in the tracer wire or tracer wire

insulation shall be permitted. At water service saddles, the tracer wire shall not be allowed to be placed between the saddle and the water main.

At all water main end caps, a minimum of 6 feet of tracer wire shall be extended beyond the end of the pipe, coiled and secured to the cap for future connections. The end of the tracer wire shall be spliced to the wire of a six pound zinc anode and is to be buried at the same elevations as the water main.

Connections between the main line tracer wire and branch connection tracer wire shall only be allowed at services, ARVs, blowoffs, irrigation turnouts and laterals.

The branch connection tracer wire shall be a single tracer wire properly spliced to the main line tracer wire. DryConn Direct Bury Lug Aqua water tight connectors, or approved equal, shall be used to provide electrical continuity.

For directional boring installations, two #12 tracer wires, listed above, shall be installed with the pipe and connected to the tracer wire at both ends, or cad welded to the existing iron pipe at both ends.

The tracer wires shall be laid flat and securely affixed to the top and side of the pipeline at five foot (5') intervals to insure its placement during the boring operation.

Contractor shall perform a continuity test on all trace wire in the presence of the Engineer or the Engineers' representative. If the trace wire is found to be not continuous after testing, Contractor shall repair or replace the failed segment of the wire.

At all repair locations where there is existing tracer wire, the tracer wire shall be properly reconnected and spliced as outlined above.

Section 801.10.3: Replace the first sentence of this section with: "Plastic pressure pipe shall be installed in accordance with applicable sections of AWWA M 23, C 900 and C905 and manufacturer's printed recommendations."

Section 801.12.1: Replace this section with the following: "The CONTRACTOR shall use mechanical thrust restraint devices at fitting and pipe joints. Concrete thrust blocking shall not be used unless specifically authorized by SDCW. Dry blocking shall be used only when authorized by Supervising Engineer. Dry blocking is to be used only for tie-in to existing pipe where service restoration time does not allow for the use of poured in place concrete and thrust restraints are not feasible.

Concrete thrust blocking is to be placed in accordance with SDCW Standard Detail Drawings. The concrete must have a minimum compressive strength of 3,000 psi. ($f_c = 3,000$ psi.) Compressive cylinder tests of concrete may be requested by the SDCW representative and are included the bid cost for thrust blocking. Fittings and bolts are to be covered with plastic prior to placement of concrete. Thrust blocking details for vertical bends will be provided by the SDCW representative and will be based on site conditions.

Mechanical thrust restraints must be placed in accordance with the manufacturer's recommendations and provide the restrained lengths shown on SDCW Standard Detail Drawings. Mechanical thrust restraints must be used where restrained pipe is called out on the construction drawings. Full lengths of pipe shall be placed next to the fitting in order to reduce the need for harness restraints, where possible.

Section 801.17 FLUSHING AND DISINFECTING WATER LINES: Disinfecting water mains shall be done in strict accordance with AWWA Specifications C651, latest revision, except as herein specified. Flushing shall be done prior to chlorination in such a manner so that the water being flushed travels throughout the main length. If no fire hydrant is installed as part of the main, then the flushing shall be done through adjacent existing fire hydrants or through a tap at no extra pay. The procedure for applying chlorine will be in strict accordance with Section 5.2.3 of AWWA C651, latest revision. A tap shall be made by Contractor at no extra pay for insertion of the chlorine. This tap shall be located where it can be used as a house

service in the future if possible and shall be located by the Engineer. Chlorine shall be inserted at a rate not less than 25 mg/l ppm of free chlorine by weight for a period of 24 hours. A different equivalent time/amount ratio may be used at the Engineer's option but for a time less than 24 hours. Payment for disinfection and bacteria testing shall be considered as paid for by the fixed unit price on pipe.

Section 801.21.1.5: Add this section: "Receipts or other acceptable documentation showing that all supplier and subcontractor invoices have been paid."

Section 801.22: Delete this section (Measurement and Payment provisions as specified in the contract documents shall be used).

B.5 APWA Section 802 - Installation of Water Service Lines: Section 802 of the APWA specifications is replaced by this section, SDCW Standard Detail Drawings, the SDCW Approved Materials List and the Measurement and Payment provisions of this specification.

B.4.1 Tapping Table: The following table shall be used to determine pipe tapping requirements:

TAPPING TABLE			
Main Size & Type	Size of Taps where No Saddle is Required	Size of Taps Requiring Tapping Saddle	Size of Taps Requiring Tapping Sleeve
2" CI	None	3/4"-1 1/2"	2"
4" & Larger CI	3/4" & 1"	1 1/2"-2"	Larger than 2"
4" & Larger AC	None	Up to and Including 2"	Larger than 2"
4" & Larger DI	3/4" & 1"	1 1/2"-2"	Larger than 2"
4" & Larger PVC	None	Up to and Including 2"	Larger than 2"

SECTION C
APPROVED MATERIALS LIST

C.1 General: All materials used in the construction of water lines shall be approved for use in drinking water systems. Materials shall be approved for use in drinking water systems by recognized organizations such as NSF International, American Water Works Association (AWWA), or other organizations or governmental authority.

All underground service line valves and fittings shall conform to the requirements of ANSI/AWWA C800, latest revision. All underground valves and fittings shall be equipped with compression connections. The compression connection shall provide conductance and have a stainless steel or bronze internal split grip ring that grips the service tubing when tightened by the nut on the outlet threads. No clamps with screw type connections are acceptable. All service line valves, fittings, and tubing shall be suitable for use with 150 psig pressure. Soldered joints for buried applications are not allowed.

All materials used in water mains and services shall be rated for a minimum of 150 psi working pressure.

The latest revision of standards shall apply with regard to standards listed in AWWA and American Society of Testing and Materials, (ASTM) Standards as well as any other referenced national or industry standards. The type of pipe, size, joints, gaskets, coating, linings, wall thickness, installation, and testing shall conform to the latest revision of the specifications as set forth below.

C.2 Ductile Iron Pipe: Ductile Iron Pipe shall be used for all new development and main extensions approved after July 14, 2014. Pipe shall conform to ANSI/AWWA C150/A21.50, latest revision, and ANSI/AWWA C151/A21.51, latest revision.

Mechanical joints, push on joints, or flanged joints shall be used as shown on all drawings and/or Standard Details. Joints shall conform to all requirements of ANSI/AWWA C110/A21.10, latest revision, and/or ANSI/AWWA C153/A21.53, latest revision, and or ANSI/AWWA C115/A21.15, latest revision. Rubber gaskets shall be equipped with contact wedges, and shall conform to all requirements of ANSI/AWWA C111/A21.11, latest revision.

Ductile Iron Pipe and Fittings shall be cement mortar lined in accordance with ANSI/AWWA C104/A21.4, latest revision, and shall be bituminous coated on the outside. Pipe thickness shown in AWWA C151/A21.51-09, latest revision, Table 6, for a rated working pressure, minimum of 150 psi shall be used, unless otherwise noted, or required for flanged pipe.

All ductile iron pipe, fittings, and valves shall be encased with polyethylene wrap as per ANSI/AWWA C105/A21.5, latest revision. Installation and hydrostatic testing of the main shall be in strict accordance with ANSI/AWWA C600, latest revision. Disinfection of the main shall conform to C651, latest revision, requirements.

C.3 PVC Pipe: PVC shall only be used in special cases and requires specific approval by SDCW. Pipe shall be manufactured and tested in strict accordance with ANSI/AWWA C900, latest revision, for 4-inch through 12-inch pipe or ANSI/AWWA C905, latest revision, for 14-inch through 36-inch pipe.

The thickness class shall be DR-18, unless otherwise noted. Pipe shall have the approval of NSF and shall be imprinted with the seal and approval of NSF. All ductile iron fittings and valves shall be encased with polyethylene wrap as per ANSI/AWWA C105/A21.5, latest revision. PVC pipe shall be installed according to all applicable AWWA standards, and in strict accordance with the pipe manufacturer's recommendations.

C.4 Iron Fittings: Ductile or grey iron fittings shall conform to ANSI/AWWA C110/21.10, latest revision, or C153/A21.53, latest revision. Grey iron fittings shall be rated for 250 psi working pressure for sizes up to 3 inch. Ductile iron fittings shall be rated for a 350 psi working pressure in sizes 3-24 inch and ductile iron flanged fittings shall be rated for a 250 psi working pressure in sizes 3-24 inch.

Fittings shall be outside coated with a petroleum asphaltic coating, approximately 1 mil thick. Fittings shall be lined with cement mortar lining in accordance with ANSI/AWWA C 104/A21.4, latest revision. Rubber gaskets shall be in accordance with ANSI/AWWA C 111/A21.11, latest revision.

All iron fittings shall be encased with polyethylene wrap as per ANSI/AWWA C105/A21.5, latest revision. Installation of iron fittings shall be in strict accordance to AWWA/ C 600, latest revision, requirements.

C.5 Mechanical Joint Retainers: Mechanical joint retainers shall be one of the following models:

Retainer Rings / Bolt-on-Flanges

Manufacturer	AWWA C900 PVC (4" – 12")	AWWA C905 PVC (14" and Greater)	Ductile Iron Pipe (all sizes)
EBAA Iron	2000 PV Megalug	2000 PV	1100 Megalug
Ford Uni-Flange	UFR 1500-E-x-U	UFR 1500-E-C	UFR 1400-D-x-U
Sigma	One-Lok SLC-X	One-Lok SLC-X	One-Lok SLD-X (new pipe) or One-Lok SSLD-X (existing pipe)
Star Pipe Products	PVC Stargrip Series 4000 with Star-Bond	PVC Stargrip Series 4000 with Star-Bond	Stargrip Series 3000 (new pipe) with Star-Bond Stargrip Series 3000S (existing pipe) with Star-Bond

Joint Harnesses

Manufacturer	AWWA C900 PVC (4" – 12")	AWWA C905 PVC (14" and Greater)	Ductile Iron Pipe (all sizes)
EBAA Iron	1500 HV	1100 HV	1700
Ford Uni-Flange			UFR 1390-C-x-U or
Sigma	PV-Lok PVP-X	PV-Lok PVP-X	One-Lok SLDH with corrsafe (new pipe) or One-Lok SSLDH with corrsafe (existing pipe)
Star Pipe Products	Pipe Restrainers Series 1100 with Star-Bond	Pipe Restrainers Series 1100 with Star- Bond	Stargrip Series 3100P (new pipe) with Star-Bond Stargrip Series 3100S (existing pipe) with Star-Bond

C.6 Tapping Sleeves: Tapping sleeves (for taps other than size-on-size) shall have an epoxy lined and coated carbon steel A-36 body or an all stainless steel body; type 304 stainless steel bolts, hex nuts and plug; gasket suitable for water use; ANSI Class 150 flange. Tapping sleeves that are size-on-size must use an all stainless steel body. Tapping sleeves shall be manufactured by Romac Industries (Model 420 fabricated steel tapping sleeve), JCM (Model 412 fabricated steel tapping sleeve), PowerSeal (Model 3490 MJ stainless steel tapping sleeve with MJ outlet or AS stainless steel tapping sleeve with flange outlet) or approved equal.

C.7 Gate Valves: Resilient seated gate valves shall be used wherever valves are called for on the drawings, unless otherwise noted. Resilient seated gate valves shall conform to AWWA C-509, latest edition, requirements; and shall be for 4" through 12" diameter N.R.S. (Non Rising Stem). A certified drawing shall be supplied by the manufacturer: The Manufacturer shall supply an affidavit of compliance to the above referenced AWWA specification. Records shall be provided showing that tests specified in AWWA C-509 have been performed. Bolts and nuts shall conform to section 4.4.4 of AWWA C-509, latest edition.

Valve end can be either flanged or mechanical and will be as specified at time of purchase. Valve shall come equipped with O Ring seals. Valves shall open left (counter clockwise) as viewed from the top and valve markings shall be made as outlined in Section 6.1, AWWA C-509, latest edition. Valves shall be

furnished with interior coating in accordance with ANSI/AWWA C550. 14" and 16" valves shall be of same specification or better and designed for 200 psi working pressure.

C.8 Butterfly Valves: Butterfly valves shall conform to AWWA C 504, latest edition. Valves furnished shall be equipped with a body style as specified on the drawings. Maximum non shock shutoff pressure shall be 150 psi and class 150B as defined in C-504, latest edition. All affidavits of testing shall be furnished. CONTRACTOR shall verify the compatibility of the valve with pipe connecting pieces. Butterfly valves are to be used only in sizes 14" and larger or where specifically called for in the drawings.

Valve body shall be ductile iron. Valve discs shall be of a noncorrosive alloy metal. Valves furnished for buried service shall come equipped with a heavy duty valve operator. Valves furnished for plant service shall be equipped with a geared actuator assembly with a hand wheel.

C.9 Valve Boxes: Valve boxes shall be five and one quarter inch (5-1/4") diameter shafts in 36 to 48 inch extension lengthen to 69 inch extension lengths as required. Boxes shall have the screw-type length adjustment. Valve boxes shall be constructed of cast or ductile iron.

C.10 Fire Hydrants: Fire hydrants shall be one of the following models:

Model	Manufacturer	Mfg. Location
Kennedy Guardian	ITT Kennedy Valve	Elmira, New York
Mueller Centurion	Mueller Company	Decatur, Illinois
Waterous Pacer	American Flow Control	South St. Paul, Minnesota

C.11 Casing Spacers: Fabricated casing spacers for use on carrier pipe installation through casing conduits shall provide dielectric insulation with polymer runners. Casing spacers with steel bands shall be coated with fusion bonded epoxy or PVC coatings for corrosion protection. Casing spacers shall be one of the following models:

Model	Manufacturer	Mfg. Location
RACI Casing Spacers	Public Works Marketing, Inc.	Plano, TX

C.12 Casing End Seals: Casing end seals shall be made of synthetic rubber and be either a pull on style or wrap around style. Stainless steel band clamps with 100% non metallic worm gear shall be furnished for clamping the seal to casing and carrier pipes. A mastic seal strip shall be factory furnished along the edge of the wrap around style seal. Refer to Section E for the list of approved casing end seals.

Model	Manufacturer	Mfg. Location
Model Ac	Advance Products & Systems	Lafayette, Louisiana

C.13 Copper Service Pipe: Copper service pipe shall conform to ASTM B 88 and shall be Type K.

C.14 Water Service Materials: Water service material manufacturers used in this section are referenced below:

Model	Manufacturer	Mfg. Location
Ford	The Ford Meter Box Co., Inc.	Wabash, Indiana
Jones	James Jones Company	El Monte, California
DFW	DFW Plastics, Inc.	Bedford, Texas
Mueller	Mueller Company	Decatur, Illinois

PLEASE NOTE: The use of compaction joint fittings in water services is prohibited.

C.15 Meter Boxes: Meter boxes shall be DFW Round Meter Pit as manufactured by DFW Plastics Inc., Mid-States Round Meter Pit, or SDCW approved equivalent. The diameter and length shall be specified as set forth in the SDCW Standard Details.

C.16 Meter Box Lids and Covers: Meter lids shall be made of plastic with the standard size pentagon bolt for the locking lid and shall be furnished with aluminum inner frost lids. Meter box covers shall be the following model and manufacturer for each size service as listed:

Meter Size	Cover Manufacturer & Model
3/4" – 1"	Ford Meter Box Co. (FW3 Wabash Double Lid Cover with EXT-2 Extension Ring)
1-1/2" – 2"	Ford Meter Box Co. (MC-36-MB Monitor Cover - includes Inner Frost Lid)

Meter box lids shall be the following model and manufacturer for each size service as listed:

Meter Size	Lid Manufacturer & Model
3/4" – 1"	Nicor Inc. (Read Rite Lid Type "A" – H20 Load Rating)
3/4" – 1"	Ford Meter Box Co. (WA3LP Locking Plastic Lid)
1-1/2" – 2"	Armorcast Products Co. (21-1/4" Dia. Polymer Concrete Cover with Worm Lock & Iron Recess)

Inner frost lids shall be the following model and manufacturer for each size service as listed:

Meter Size	Lid Manufacturer & Model
3/4" – 1"	Ford Meter Box Co. (W3BA 11-1/2" Inner Aluminum Lid)
1-1/2" – 2"	Ford Meter Box Co. (MB 20" Inner Metal Lid)

C.17 Meter Yokes: Yokes shall be constructed of cast iron. The meter yoke bar shall be painted. A 5/8" meter shall use 5/8" x 3/4" yoke; a 3/4" meter shall use 1" yoke, two (2) 1" x 3/4" meter adapters, and one (1) expansion connector; and a 1" meter shall use 1" yoke and one (1) expansion connector. Yokes shall be the model and manufacturer as listed:

Manufacturer	Model for 5/8"	Model for 3/4" or 1"
AY McDonald	14-2	14-4
Ford	Y 502	Y 504
Mueller	H-5020	H-5040

C.18 Angle Valves: Angle valves shall be ball type compression connection for CTS tubing x locknut. (Locknut for yoke bar shall be used instead of a meter swivel). Angle valves shall be the model and manufacturer as listed:

Manufacturer	Ball Style Model for 5/8"	Ball Style Model for 3/4"	Ball Style Model for 1"
AY McDonald	4602BYQ		4602BYQ
Mueller	B-24273	B-24273	B-24273

Include the following information for residential double meter services:

1. 5/8" Double Service Branch Piece
 - Acceptable Manufacturers: Jones (J-2613SG w/ dimensions of 1"x7-1/2"x 3/4"MIP), Mueller (H-15363 1"x7-1/2"x 3/4"MIP), and Ford (U48-43-Q 1"x7-1/2"x 3/4" MIP).
2. 5/8" Double Service Angle Valve
 - Acceptable Manufacturer: Mueller Co. Angle Ball Valve (B-24278 w/ dimensions of 5/8"x 3/4"x 3/4"FIP) and Ford Angle Ball Yoke Valve (BA91-323W w/ dimensions of 5/8"x 3/4"& 3/4" FIP).

C.19 Angle Ell: Angle ells shall be equipped with test valves and shall be compression connection by locknut. Angle ells shall be the model and manufacturer as listed:

Manufacturer	Model for 5/8" x 3/4"	Model for 3/4"	Model for 1"
Mueller	H-14237		
AY McDonald	4779YWQ 3/4 x 01	4779YWQ 1 x 3/4	4779YWQ 1 x 1

C.20 Expansion Connectors: Expansion connectors shall be of the three piece design with composition gaskets. Plastic or rubber gaskets will not be accepted. Expansion connectors shall be the model and manufacturer as listed:

Manufacturer	Model for 5/8"	Model for 3/4"	Model for 1"
AY Mc Donald	14-2 EHG		14-4 EHG
Ford	EC23	EC4*	EC4
Mueller	H-14234		H-14234

* Two (2) Meter Adapters (Ford A24) also required.

C.21 Meter Settings, 1 1/2" & 2": Prefabricated meter settings for 1-1/2" & 2" meters shall be equipped with ball-type angle valves on the meter inlet and outlet sides and shall have a 24" rise and shall have FIP inlet and outlets and shall have a MIP by copper tubing compression adapter. Meter setter shall not have a bypass. Risers shall be positioned at least 2" away from the inner wall of the meter pit. Meter setting shall be the model and manufacturer as listed:

Manufacturer	Model for 1 1/2" (Plug Valves)	Model for 2" (Plug Valves)
Ford	VV76-24-1166	VV77-24-1177
Mueller	H-1422-00-150	H-1422-00-200

Manufacturer	Model for 1 1/2" (Ball Valves)	Model for 2" (Ball Valves)
AY McDonald	20-624WWFF 660	20-724WWFF 770

The adapter shall be the model and manufacturer as listed:

Manufacturer	Model for 1 1/2"	Model for 2"
Ford	C84-66	C84-77
Mueller	H-15428-150	H-15428-200

C.22 Corporation Stops: Corporation stops must be ball type with CC thread (AWWA tapered thread) inlet and compression connection on outlet (CTS – copper tube size). Iron pipe thread not acceptable. Corporation stops shall be the model and manufacturer as listed:

Manufacturer	Model Number
AY McDonald	4701Q
Mueller	B-25008

C.23 Service Tapping Saddles: For PVC (C-900) installations: bronze parts are not acceptable. Service tapping saddle shall be stainless steel, double strap with iron body. The iron body shall have either epoxy coating (10-12 mills minimum) or nylon coating (10-12 mills minimum). Acceptable manufacturers are Smith-Blair and Mueller Co.

For DIP/CIP installations: Direct tap with CC threads (AWWA tapered threads) is preferred. Iron pipe thread is not acceptable. Alternate exception is installation of stainless steel full circle tapped clamp with CC threads (AWWA tapered threads). All stainless steel to be: one section, two bolt minimum. Romac and JCM are acceptable manufacturers. When multiple taps are required the following spacing is approved: Minimum 12” horizontal spacing and vertical spacing shall alternate 75° and 85° from vertical.

C.24 Service Tapped Couplings: Service tapped couplings shall have AWWA threads and shall be either cast iron, ductile iron or PVC and shall meet all requirements for fittings specified in Section C.

C.25 Prefabricated Meter Vault: Prefabricated meter vault shall consist of a vault body with open bottom, a double opening cover with a torsion lift and support mechanism. The vault body shall be manufactured of fiberglass-reinforced plastic. The covers shall be manufactured of polymer concrete. The torsion frame assembly shall be manufactured of hot-dipped galvanized steel. The cover shall be torsion assist polymer concrete consisting of two torsion assisted sides and a stationary center cover. The torsion assisted covers shall have the capability of opening 90 degrees and shall be secured in the closed position with hex-head bolt downs. The stationary center cover shall be secured with stainless steel hex-head bolts. Polymer concrete covers shall be skid resistant with a 0.5 minimum coefficient of friction. Covers shall have lifting slots with stainless steel lifting pins. Vault body and cover assembly shall be designed to withstand 10,400 pound vertical load when installed at grade level. Vaults shall be manufactured by Armorcast Products Company, North Hollywood, California.

C.26 Air Release Valves: Air release valves shall be combination valves capable of releasing large quantities of air during filling of an empty pipe, and breaking vacuum during pipe draining by allowing the re-entry of large quantities of air, and releasing air accumulations under pipe operating pressure. The air release valves shall be Crispin Combination Air Valve (1” valves shall be Model C10, 2” valves shall be Model C20) as manufactured by Multiplex Manufacturing Co., Berwick, Pennsylvania; Val-Matic Valve and Manufacturing Corp. Combination Air Valve (1” valve shall be Model 201C and 2” valve shall be Model 202C); A.R.I Combination Air Valve Model D-040 or approved equal.

C.27 Utility Marking Posts: Utility marking post material shall be manufactured of fiberglass. The marking post shall be blue and have white labels on both sides with black lettering stating “CAUTION WATER PIPELINE/BEFORE DIGGING CALL NM ONE CALL 811 FOR LOCATES.” Marking posts shall be constructed of resilient materials and shall not deteriorate with exposure to temperature extremes. Marking post colors shall not fade with exposure to sun, water, etc. Marking posts shall be 72” long by 4” wide. Acceptable manufacturers are Carsonite International – Curv-Flex® (Early Branch, South Carolina) or Rhino-FiberCurve™ (Waseca, Minnesota).

C.28 Tracing Wire/ Test Connections:

Manufacturer	Model
Copperhead	#12 Copper Clad Steel (CCS) High Strength Soft Drawn 380#
Copperhead	Snake Bite Corrosion Proof Wire Connector
Copperhead	Snake Pit Magnetized Tracer Box

All water mains and other pressure pipelines shall be buried with a continuous electrical tracing wire to enable future location of pipe. The tracing wire shall be an insulated #12 AWG solid conductor. Tracing wires shall be taped to the top of the pipe at 10-foot intervals to prevent dislocation of the wire during backfilling. There shall be a Test Station for every 300 ft. run without a service or a hydrant.

The tracing wire shall be spliced and extended to an above or at grade Test Station near the base of fire hydrants, at valve boxes, and meter cans as directed by SDCW representatives.

The Test Station shall be a 2-inch monitoring station as manufactured by Handley Industries, Jackson, Michigan. The Test Station shall be furnished complete with a cast iron lid and a magnet for easy location with a line locator. A 12” by 12” by 4” deep concrete pad around the test box shall be provided for security.

The tracing wire shall be spliced using a 3-way low voltage tap connector, 3M-562 or equivalent. The splice shall be coated for corrosion protection using a general purpose tape sealant similar to Ray-Chem products, 1.5-inch wide, 0.012-inch thick spirally wrapped with 1-inch overlap at connector and wire. The tape sealant shall be covered with a layer of electrical tape as an outer wrap.

Bonding Wire for Line Tracing

When the electrical continuity of two lengths of metal pipe is broken by a section of plastic pipe, the metal pipes at either end shall be bonded across the plastic pipe to restore the electrical continuity.

Bonding of the metal pipe shall be by means of cadweld (exothermic) connectors and #4 AWG insulated copper wire. The wire ends and cadwelds shall be capped and sealed to prevent corrosion per Standard Details.

STANDARD CONSTRUCTION DETAILS
SANGRE DE CRISTO WATER DIVISION

DETAIL SHEET INDEX

<u>No.</u>	<u>Title</u>
1	General Notes
2	5/8" Single Service
2A	¾" Single Service
3	1" Single Service
4	1-1/2" Single Service
5	2" Single Service
6	5/8" Single Service
7	Fire Hydrant
7B	Fire Hydrant Bollard Detail
8	Valve and Valve Box Installation
9	Valve Stem Extension
10A	Joint Restraint Table
10B	Joint Restraint Table
11	Flush Hydrant
12	Service Location Detail
13	Concrete Thrust Blocking
14A	CMU Vault
14B	CMU Vault
15	Prefabricated Vault
16	Pipe Casing Detail
17	1" and 2" Air-Vacuum Valve Vault
18	3" Domestic Service
19	4" Domestic Service
20	3" and Larger Air Vacuum Valve Vault
21	Valve Reference Map
22	Pressure Reducing Valve
23	PRV Pressure Gauge Mount Detail
24	Tracing Wire Detail
25	Bonding Jumper Detail
26	2" Blow-off Valve

GENERAL NOTES

1. CONTRACTOR SHALL NOTIFY THE SANGRE DE CRISTO WATER (SDCW) FIVE (5) DAYS PRIOR TO COMMENCEMENT OF WORK.
2. CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE SDCW CONSTRUCTION STANDARDS AND SPECIFICATIONS.
3. ALL EASEMENTS SHALL BE DEDICATED, CLEARED, GRADED AND STAKED PRIOR TO WATER LINE INSTALLATION.
4. ALL STREETS SHALL BE CUT TO WITHIN $\pm 6"$ OF FINAL GRADE PRIOR TO WATER LINE INSTALLATION.
5. LOT CORNERS SHALL BE STAKED PRIOR TO SERVICE LINE INSTALLATION. CURB, GUTTER AND DRIVEWAY APRON SHALL BE INSTALLED PRIOR TO SERVICE LINE INSTALLATION UNLESS OTHERWISE APPROVED IN WRITING BY SDCW.
6. CONTRACTOR (DEVELOPER) SHALL PROVIDE CONSTRUCTION STAKING UTILIZING THE APPROPRIATE RIGHT-OF-WAY MAPS, SIGNED PLATS AND SDCW DRAWINGS.
7. MATERIAL SUBMITTALS SHALL BE APPROVED BY SDCW PRIOR TO CONSTRUCTION.
8. CONTACT **NEW MEXICO ONE CALL AT 811** TWO (2) WORKING DAYS IN ADVANCE OF CONSTRUCTION FOR UTILITY SPOTS.
9. PRESSURE REGULATORS SHALL BE INSTALLED ON ALL SERVICES DOWNSTREAM FROM THE METER.
10. A MINIMUM OF 4 FEET COVER TO TOP OF PIPE SHALL BE MAINTAINED ON ALL WATER MAINS AND SERVICES.
11. CONTRACTOR SHALL SUBMIT AS-BUILT CONSTRUCTION PACKET WITHIN FIVE (5) DAYS OF COMPLETION OF CONSTRUCTION INCLUDING: VALVE TIES, AS-BUILT DRAWINGS (INCLUDING, BUT NOT LIMITED TO: FITTING-TO-FITTING MEASUREMENTS, SERVICE-TO-SERVICE MEASUREMENTS, CENTER OF MAIN TO CENTER OF SERVICE MEASUREMENTS, LENGTH OF MAIN INSTALLED, FITTINGS INSTALLED, ETC.) AND POTABILITY RESULTS.
12. ALL VALVE BOXES SHALL BE BROUGHT UP TO GRADE AFTER FIRST COURSE OF ASPHALT AND BEFORE FINAL COURSE OF ASPHALT.
13. FIRE HYDRANTS SHALL BE NUMBERED USING REFLECTIVE NUMERALS. THE REFLECTIVE NUMERALS SHALL BE OBTAINED BY THE CONTRACTOR FOR THE SDCW FIELD REPRESENTATIVE AT THE TIME THE NOTICE TO PROCEED (NTP) IS ISSUED. NUMBERS SHALL BE LEGIBLE FROM THE ROAD. PRIOR TO INSTALLING NUMBERS, FIRE HYDRANTS SHALL BE PAINTED.
14. A MECHANICAL RESTRAINT SYSTEM SHALL BE UTILIZED ON FITTINGS AND PIPING FOR THRUST RESTRAINT. CONCRETE THRUST BLOCKING SHALL BE USED ONLY FOR SPECIAL CONDITIONS (E.G. CAPS WHERE MAIN WILL BE EXTENDED IN THE FUTURE) AS SPECIFICALLY APPROVED BY SDCW.
15. ANY FIELD CHANGES TO THESE PLANS REQUIRE APPROVAL OF BOTH THE DESIGN ENGINEER AND SDCW.
16. WORK ON SDCW FACILITIES SHALL NOT BEGIN UNTIL SDCW HAS ISSUED A NTP TO THE APPROVED UTILITY CONTRACTOR.



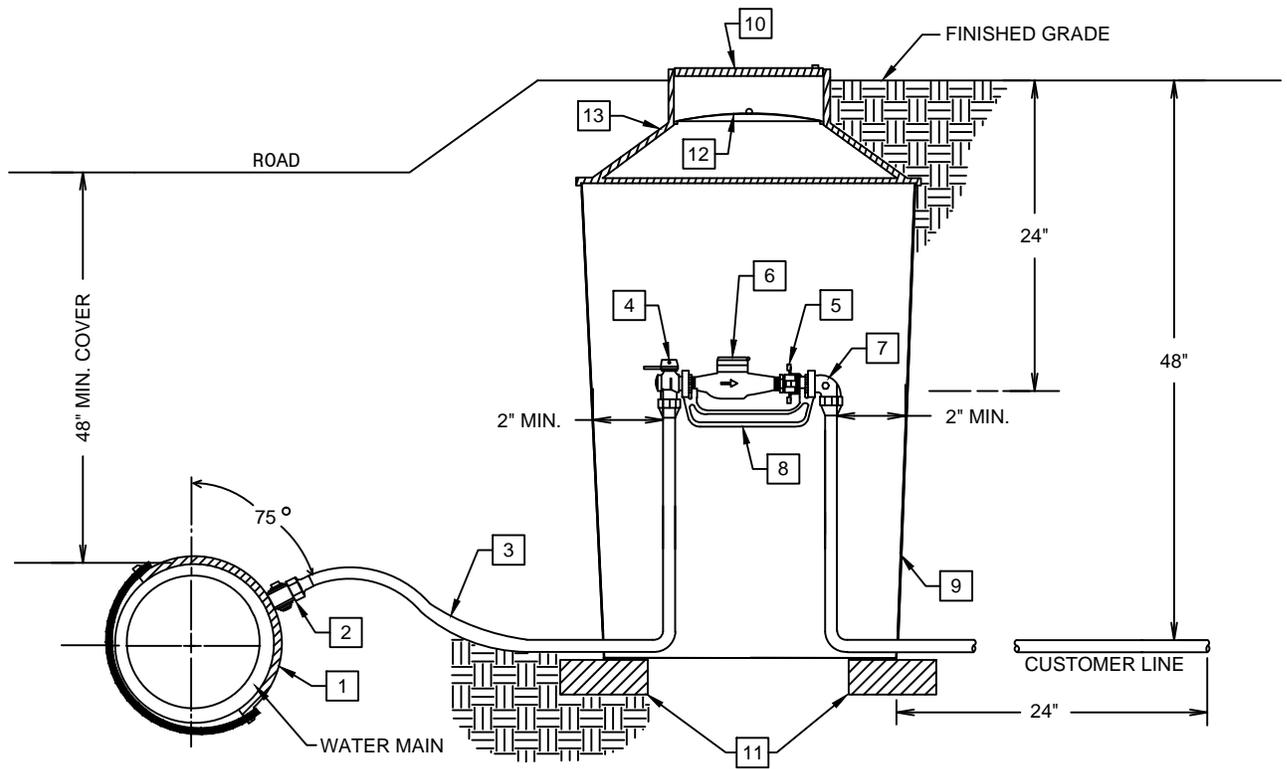
**SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS**



GENERAL NOTES

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

01



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 3/4" SERVICE SADDLE
- 2 3/4" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 3/4" COPPER TUBING (TYPE " K ")
- 4 3/4" ANGLE VALVE
- 5 3/4" EXPANSION CONNECION (5/8" X 3/4" M.T.R. CONN.)
- 6 5/8" X 3/4" SEALED REGISTER WATER METER (FURNISHED & INSTALLED BY SDCW)
- 7 3/4" ANGLE ELL WITH TEST VALVE
- 8 3/4" CAST IRON METER YOKE
- 9 20" DIA. X 36" METER BOX
- 10 POLYMER LID (12-5/16" DIA.)
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER ALUMINUM FROST LID
- 13 DOUBLE LID COVER (20" DIA. X 11-1/2" DIA. INNER OPENING)



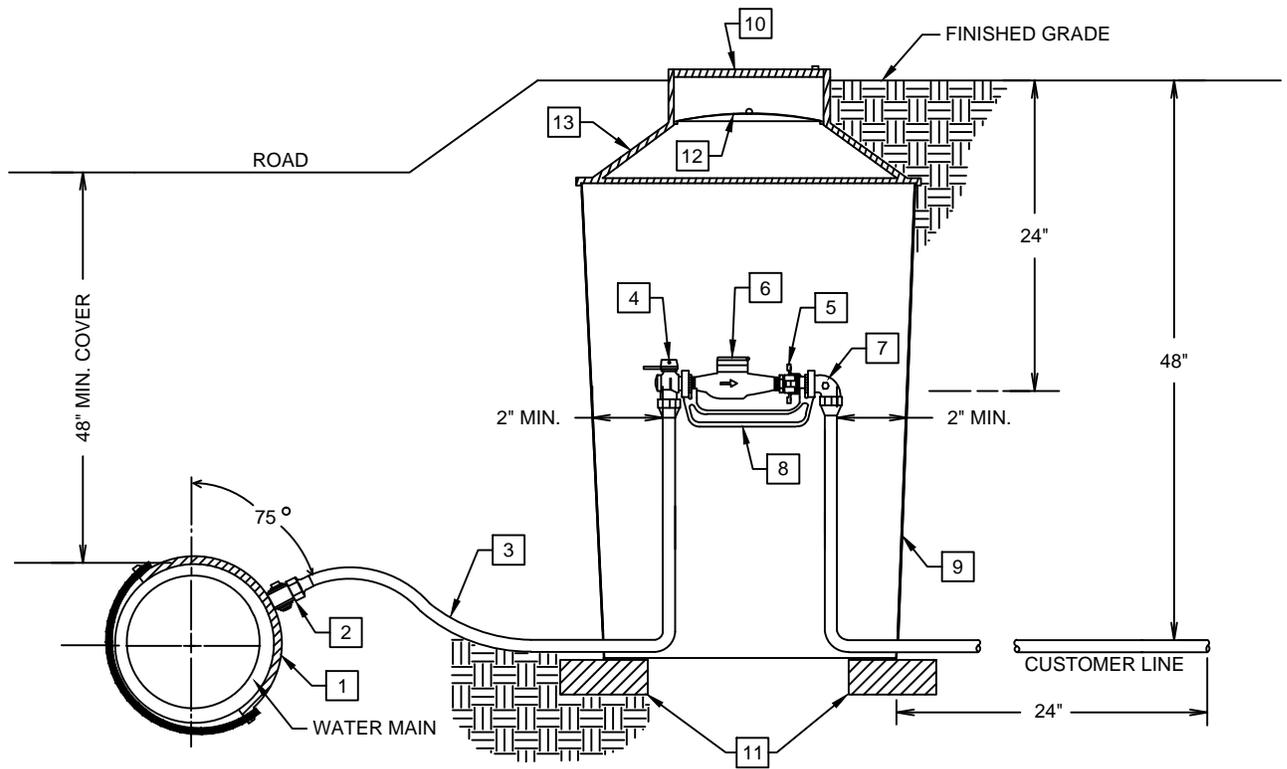
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



5/8" SINGLE SERVICE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

02



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 1" SERVICE SADDLE
- 2 1" CORPORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 1" COPPER TUBING (TYPE " K ")
- 4 1" ANGLE VALVE
- 5 1" EXPANSION CONNECION
- 6 1" SEALED REGISTER WATER METER (FURNISHED & INSTALLED BY SDCW)
- 7 1" ANGLE ELL WITH TEST VALVE
- 8 1" CAST IRON METER YOKE
- 9 24" DIA. X 36" METER BOX
- 10 POLYMER LID (12-5/16" DIA.)
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER ALUMINUM FROST LID
- 13 DOUBLE LID COVER (20" DIA. X 11-1/2" DIA. INNER OPENING) WITH EXTENSION RING (20" DIA. X 24" DIA.)



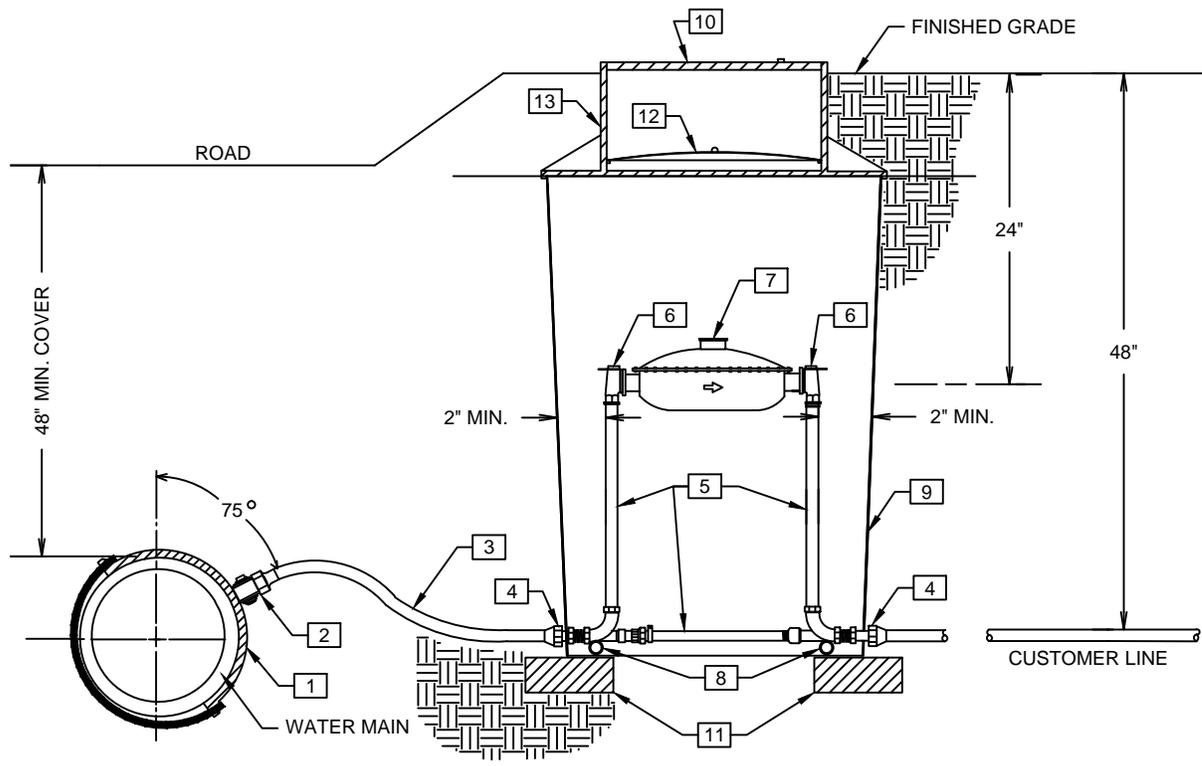
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



1" SINGLE SERVICE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

03



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 1-1/2" SERVICE SADDLE
- 2 1-1/2" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 1-1/2" COPPER TUBING (TYPE " K ")
- 4 1-1/2" ADAPTER COUPLING
- 5 1-1/2" PREFABRICATED METER SETTER (NO BY-PASS)
- 6 1-1/2" BALL ANGLE VALVE (2 TOTAL)
- 7 1-1/2" SEALED REGISTER WATER METER - 13" FLANGE-TO-FLANGE SPACING (METER FURNISHED & INSTALLED BY SDCW)
- 8 1" GALVANIZED PIPE 24" LONG
- 9 36" DIA. X 36" METER BOX
- 10 20" DIA. POLYMER LID
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER METAL FROST LID
- 13 36" DIA. X 20" DIA. MONITOR COVER



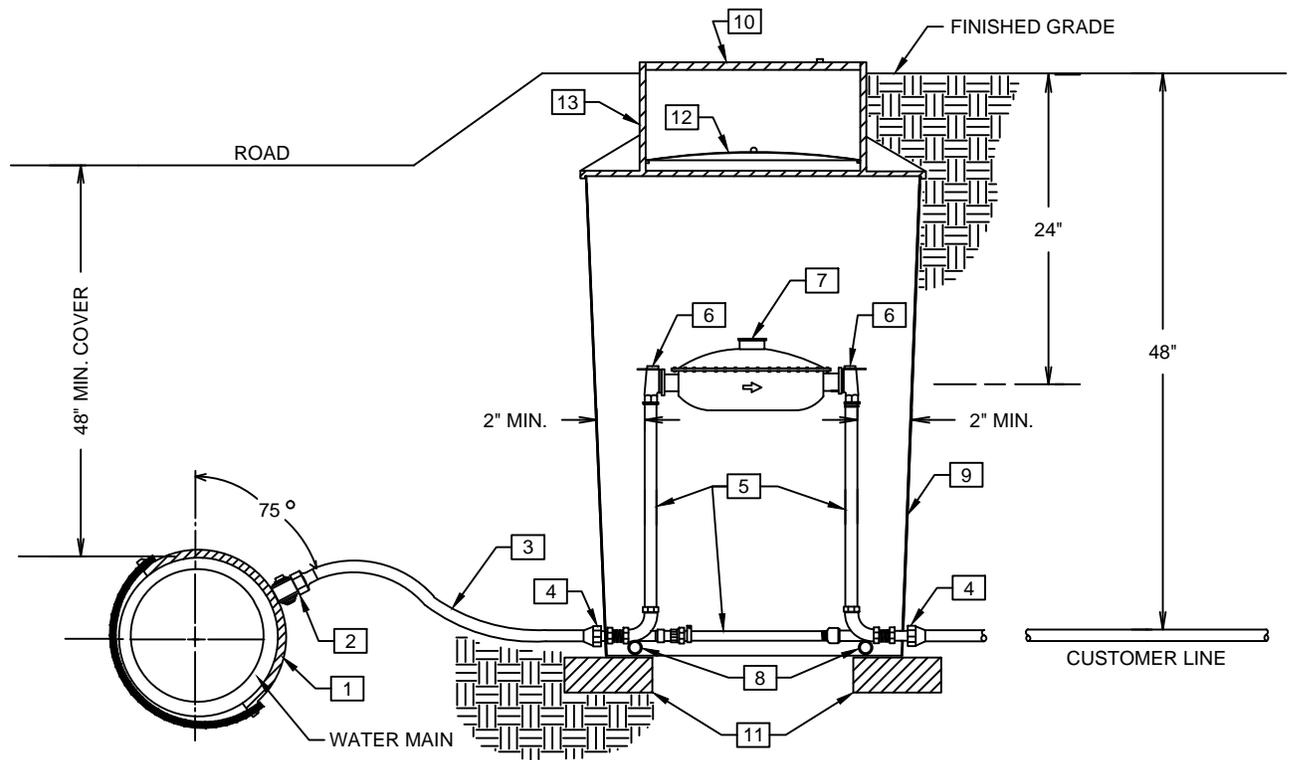
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



1-1/2" SINGLE SERVICE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

04



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 2" SERVICE SADDLE
- 2 2" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 2" COPPER TUBING (TYPE " K ")
- 4 2" ADAPTER COUPLING
- 5 2" PREFABRICATED METER SETTER (NO BY-PASS)
- 6 2" BALL ANGLE VALVE (2 TOTAL)
- 7 2" SEALED REGISTER WATER METER - 17" FLANGE-TO-FLANGE SPACING (METER FURNISHED & INSTALLED BY SDCW)
- 8 1" GALVANIZED PIPE 24" LONG
- 9 36" DIA. X 36" METER BOX
- 10 20" DIA. POLYMER LID
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER METAL FROST LID
- 13 36" DIA. X 20" DIA. MONITOR COVER



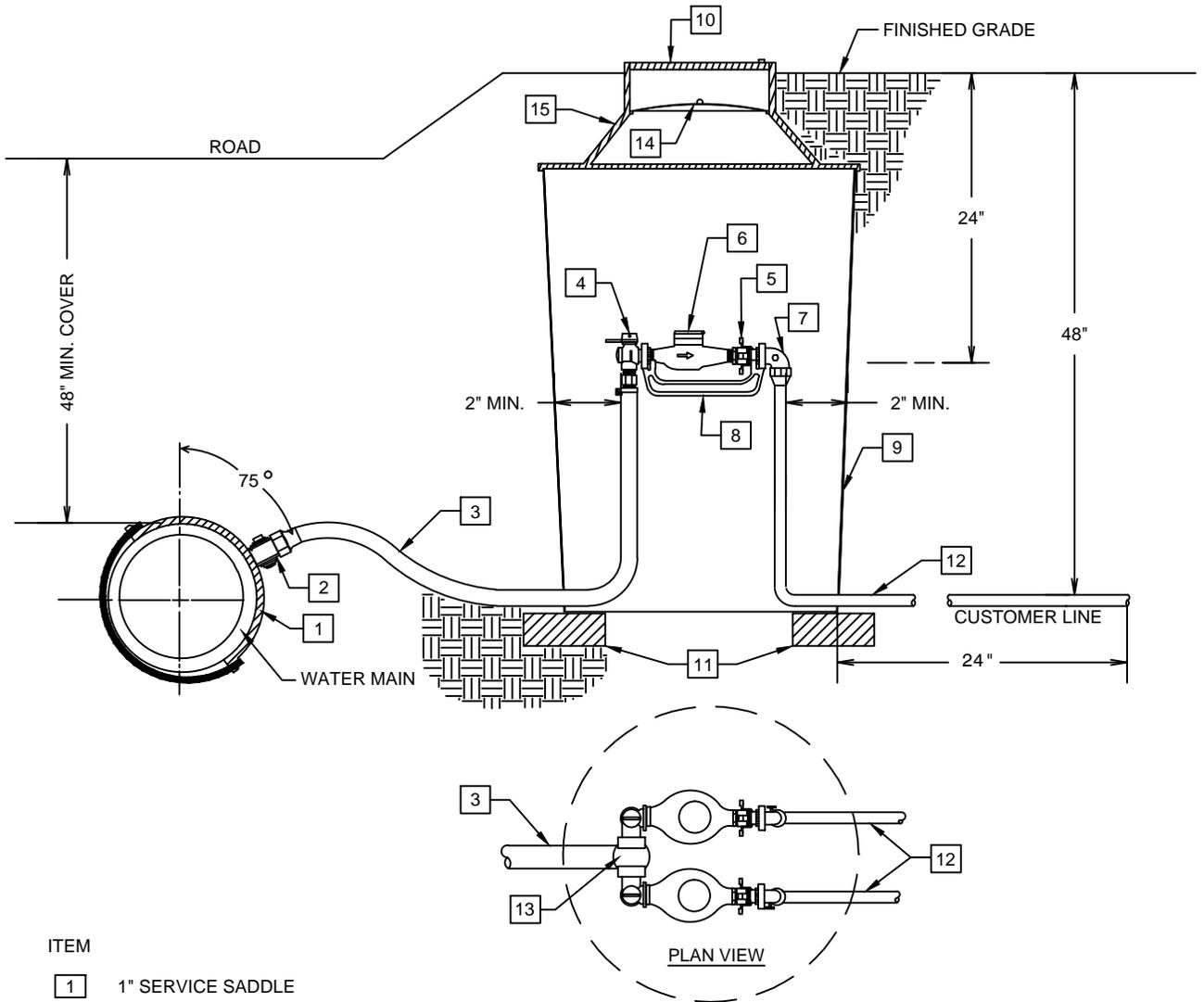
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



2" SINGLE SERVICE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

05



ITEM

- 1 1" SERVICE SADDLE
- 2 1" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 1" COPPER TUBING (TYPE " K ")
- 4 3/4" ANGLE VALVE (2 EA.)
- 5 3/4" EXPANSION CONNECTION (2EA.)
- 6 3/4" X 5/8" SEALED REGISTER WATER METER (FURNISHED & INSTALLED BY SDCW)
- 7 3/4" ANGLE ELL WITH TEST VALVE (2 EA.)
- 8 3/4" CAST IRON METER YOKE (2 EA.)
- 9 24" DIA. X 36" METER BOX
- 10 POLYMER LID (12-5/16" DIA.)
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 3/4" COPPER TUBING (TYPE " K ")
- 13 BRANCH PIECE
- 14 INNER ALUMINUM FROST LID
- 15 DOUBLE LID COVER (20" DIA. X 11-1/2" DIA. INNER OPENING) WITH EXTENSION RING (20" DIA. X 24" DIA.)



SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS

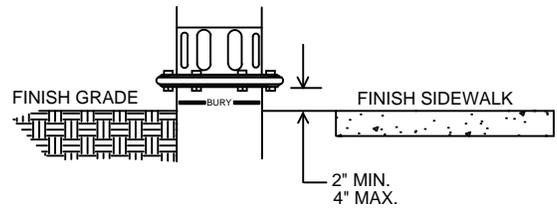
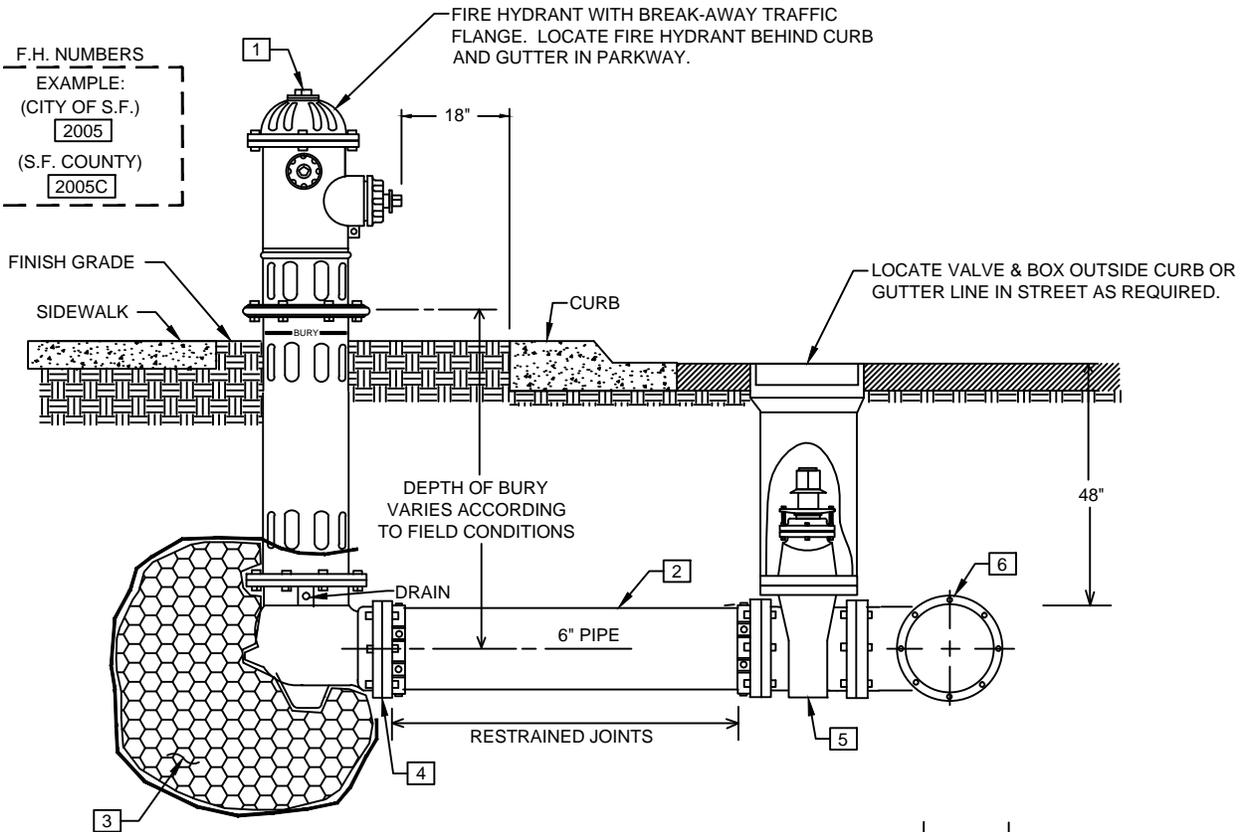


5/8" DOUBLE SERVICE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

06

F.H. NUMBERS
 EXAMPLE:
 (CITY OF S.F.)
 2005
 (S.F. COUNTY)
 2005C



FIRE HYDRANT DETAIL

KEYED NOTES:

- 1 FIRE HYDRANT
- 2 6" PIPE
- 3 1/2 CUBIC YARD 3/8" GRAVEL DRAIN W/ 10 MIL. PLASTIC SHEET
- 4 6" MJ RETAINER AND 6" HARNESS (IF REQUIRED)
- 5 6" MJ x FL GATE VALVE & BOX
- 6 TEE: MJ RUN W/ 6" FLANGE OUTLET

CONSTRUCTION NOTES:

- A - FIRE HYDRANT SHALL NOT BE INSTALLED NEAR ANY STRUCTURES AND SHALL HAVE A MINIMUM 36" CLEAR SPACE IN ALL DIRECTIONS.
- B - LOCATE HYDRANT 18" BEHIND BACK OF CURB UNLESS OTHERWISE SHOWN ON PLANS OR SPECIFICALLY DIRECTED BY S.D.C.W. HYDRANT TO BE SET PLUMB AND AT PROPER ELEVATION (ELEVATION PROVIDED BY DEVELOPER) HYDRANTS INSTALLED AS PART OF A NEW DEVELOPMENT/EXTENSION SHALL BE A STANDARD 5' BURY HYDRANT AND SHALL BE SET TO FINISHED GRADE WITHOUT THE USE OF HYDRANT EXTENSIONS (IF AN ADJUSTMENT IS REQUIRED, RE-LAY THE WATER MAIN AND FIRE HYDRANT LEG OR INSTALL RESTRAINED OFFSET AS DIRECTED BY SDCW)
- C - WEEP HOLE MUST HAVE 1/4" PLUG REMOVED AND BE FREE DRAINING INTO GRAVEL DRAIN. USE FULLY RESTRAINED JOINTS FROM THE FIRE HYDRANT TO THE FLANGED CONNECTION ON VALVE.
- D - FIRE HYDRANT SHALL BE PAINTED AND REFLECTIVE NUMBERS INSTALLED AFTER INSTALLATION.



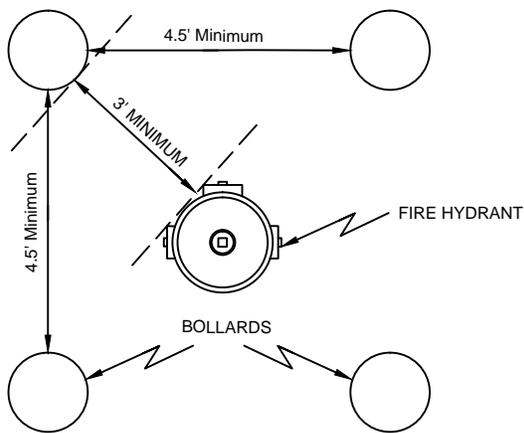
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



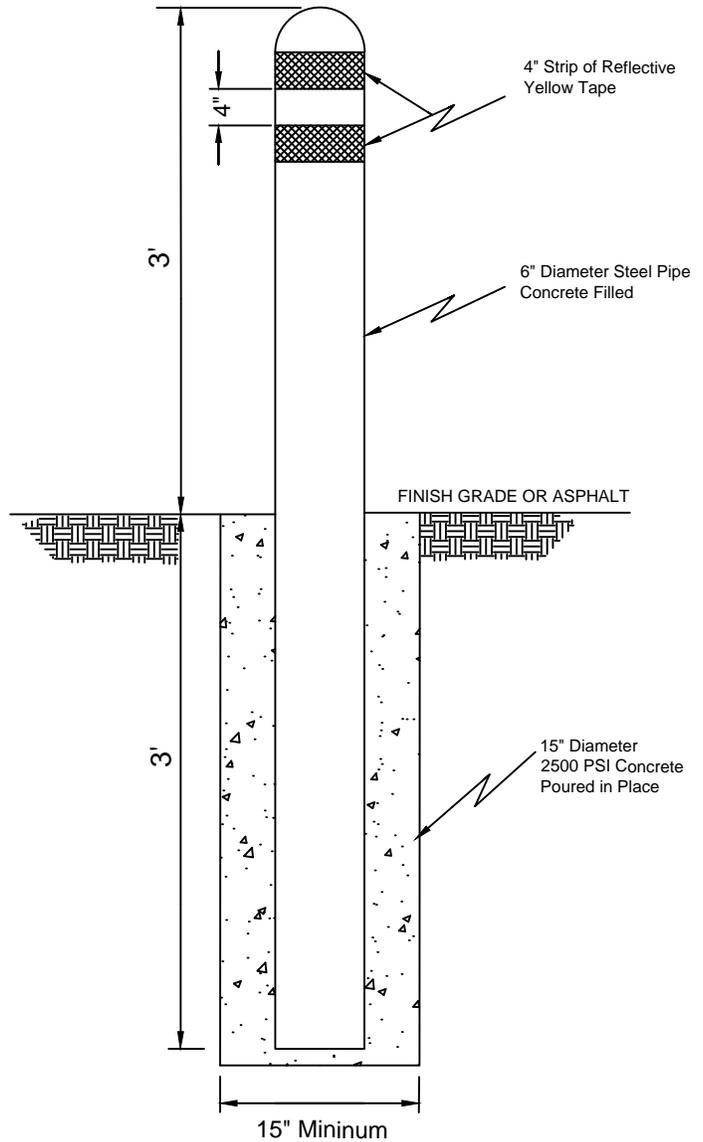
FIRE HYDRANT

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

07



**BOLLARD PLACEMENT
PLAN VIEW**



BOLLARD DETAIL

CONSTRUCTION NOTES:

1. BOLLARDS SHALL BE INSTALLED IF THERE IS NO CURB BETWEEN THE ROAD SURFACE AND THE HYDRANT OR WHENEVER REQUIRED BY SDCW. BOLLARDS SHALL NOT BE PLACED IN THE CLEAR ZONE OF THE ROADWAY AS DEFINED IN THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS' (AASHTO) "ROADSIDE DESIGN GUIDE."
2. BOLLARDS SHALL BE LOCATED A MINIMUM OF 3 FEET FROM THE FIRE HYDRANT.
3. BOLLARDS SHALL BE PAINTED WITH WELLBORN TRAFFIC YELLOW, SHERWIN WILLIAMS UTILITY YELLOW, OR SDCW APPROVED EQUAL.
4. BOLLARDS SHALL BE FILLED WITH CONCRETE AFTER INSTALLATION. THE TOP OF THE BOLLARD SHALL BE ROUNDED AS SHOWN TO PREVENT WATER ACCUMULATION.



SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS

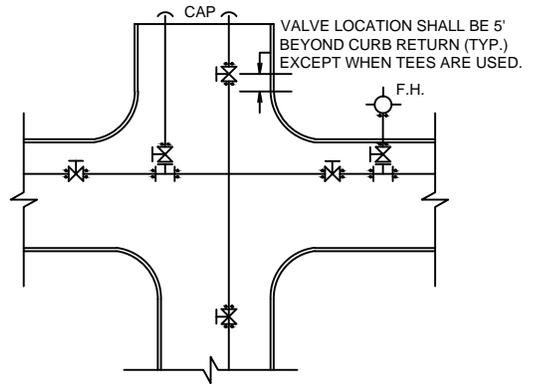
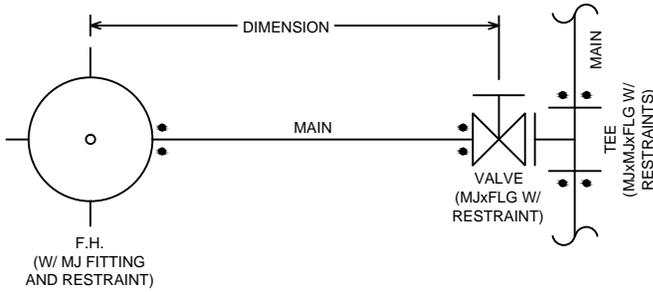


**FIRE HYDRANT
 BOLLARD DETAIL**

DRAWN BY:	DATE: 12/2013
CHECKED:	SCALE:
APPROVED:	

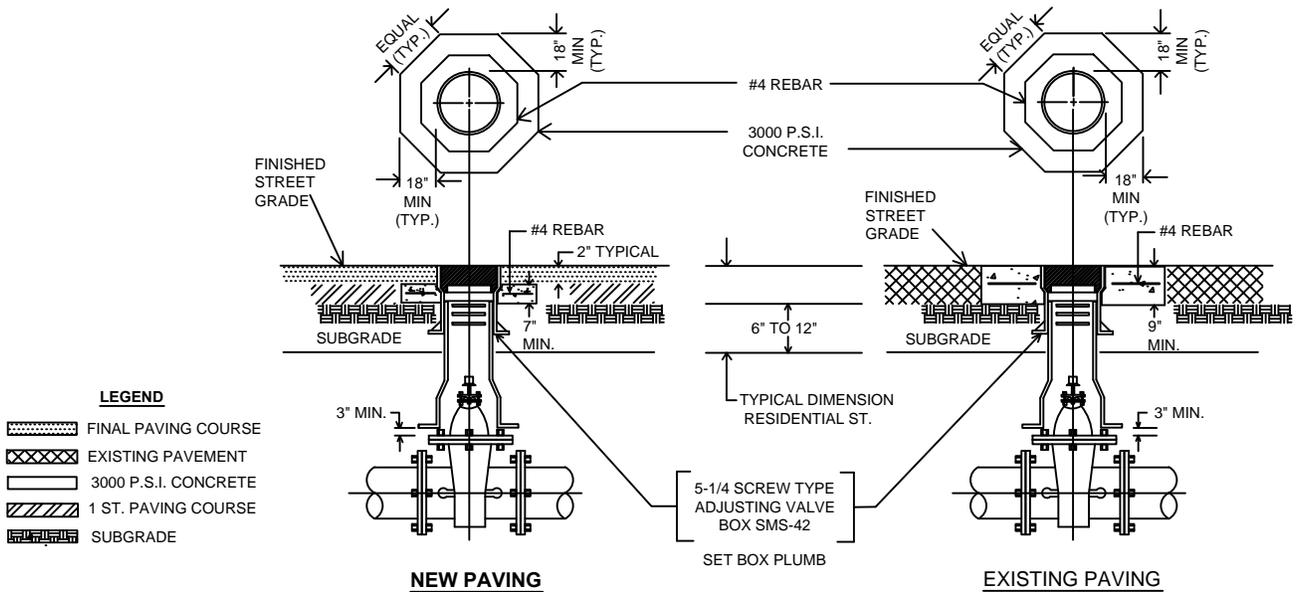
07B

VALVE INSTALLATION



- VALVES**
- VALVES SHALL BE LOCATED AT ROAD INTERSECTIONS WITH THE INTENT OF ISOLATING THE WATER DISTRIBUTION SYSTEM, AS APPROVED BY SDCW.
 - INLINE VALVES SHALL TYPICALLY BE INSTALLED FIVE (5) FEET BEYOND THE CURB RETURN, AS SHOWN IN THE DETAIL, AND CONSIST OF MECHANICAL JOINT FITTINGS WITH RESTRAINTS EXCEPT WHEN USING TEES, WHICH SHALL HAVE MECHANICAL JOINT x FLANGE FITTING.
 - VALVES ON FIRE HYDRANT LEGS SHALL HAVE MECHANICAL JOINT x FLANGE FITTINGS AND SHALL CONNECT TO FIRE HYDRANT TEE WITH THE FLANGE FITTING AND THE MECHANICAL JOINT FITTING SHALL HAVE A RESTRAINT, AS SHOWN IN THE DETAIL.
 - VALVES ON TEES SHALL HAVE VALVES AND TEES WITH MECHANICAL JOINT x FLANGE FITTINGS. THE MECHANICAL JOINT FITTING SHALL HAVE A RESTRAINT, AS SHOWN IN THE DETAIL.

VALVE BOX INSTALLATION



- NEW PAVING** VALVE BOXES SHALL BE INSTALLED AND RAISED TO GRADE IN THE FOLLOWING MANNER FOR NEW PAVING:
- VALVE BOX SHALL BE INSTALLED OVER VALVE DURING MAIN INSTALLATION. TOP OF VALVE BOX SHALL BE LEFT BELOW THE TOP OF SUBGRADE UNTIL VALVE IS READY TO BE RAISED TO FINAL GRADE.
 - WHEN THE VALVE BOX IS READY TO BE RAISED, AN OCTAGON SHAPE SHALL BE CUT-OUT AROUND THE VALVE BOX FROM THE FIRST PAVING LIFT (AS SHOWN IN THE DETAILS); THE VALVE BOX SHALL BE RAISED TO THE FINISHED STREET GRADE; THE SOIL AROUND THE VALVE BOX SHALL BE THOROUGHLY COMPACTED IN ACCORDANCE WITH CITY STANDARDS; THE CONCRETE COLLAR (CONSISTING OF 3,000 PSI CONCRETE AND #4 REBAR) SHALL BE Poured FLUSH WITH THE TOP OF THE FIRST PAVING COURSE (INCLUDING HAND RODDING CONCRETE TO REMOVE VOIDS); AND THE VALVE BOX SHALL BE PROTECTED FROM VEHICULAR TRAFFIC FOR 24 HOURS.

EXISTING PAVING INSTALL VALVE BOXES PER "NEW PAVING" (SEE ABOVE) WITH THE CONCRETE COLLAR Poured FLUSH WITH THE FINISHED GRADE OF THE EXISTING PAVING WITH A SMOOTH TROWELED FINISH. NOTE: IF EXCAVATION OVER 42" SQUARE IS REQUIRED TO ADJUST VALVE BOX TO GRADE, "NEW PAVING" CONCRETE COLLAR PROCEDURE SHALL BE FOLLOWED AS WELL AS ANY NECESSARY PAVING SHALL BE COMPLETED.

UNPAVED AREAS IN DIRT OR GRAVEL STREETS, TOP OF VALVE BOX AND CONCRETE COLLAR SHALL BE LEFT 6" BELOW THE STREET GRADE. IN OTHER UNPAVED AREAS, VALVE BOX AND CONCRETE COLLAR SHALL BE LEFT 2" ABOVE FINISHED GRADE OR AS DIRECTED BY SDCW.

PROTECTION OF VALVE BOXES VALVE BOXES SHALL BE PROTECTED FROM DAMAGE, LOSS AND SHALL NOT BE FILLED WITH DIRT AND DEBRIS. VALVES MUST BE ACCESSIBLE DURING CONSTRUCTION WITH MINIMUM EXCAVATION. VALVES IDENTIFIED BY SDCW AS KEY SHUT OFF VALVES SHALL REMAIN AT GRADE DURING ALL PHASES OF CONSTRUCTION.

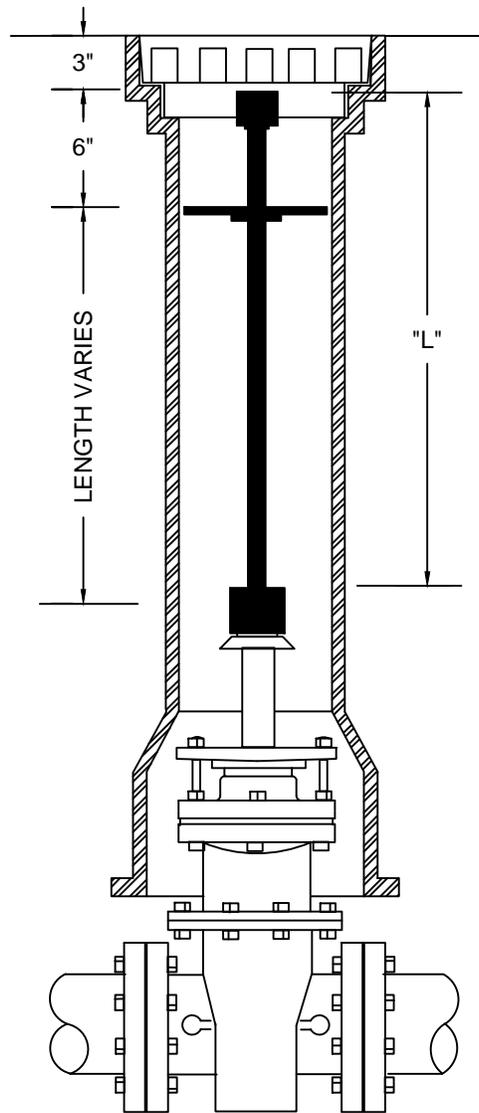


SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



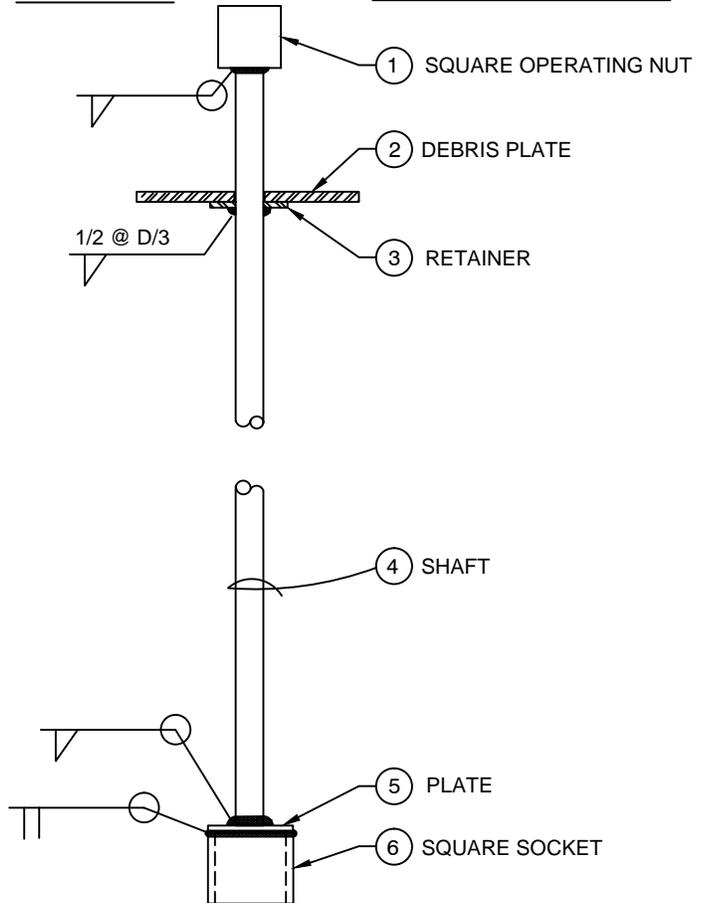
VALVE & VALVE BOX INSTALLATION

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



WELD TYPES

EXTENSION STEM ITEMS



EXTENSION STEM ITEM DESCRIPTIONS

- ① 2"x 2"x 2" BAR
- ② 5" DIA. PLATE 3/16" W/1-3/8" DIA. HOLE
- ③ 1-3/8" DIA. HEAVY WASHER
- ④ 1" DIA. SCHEDULE 40 STEEL PIPE (L ≤ 6')
1-1/4" DIA. SCHEDULE 40 STEEL PIPE (L > 6')
- ⑤ 2-1/2"x 2-1/2"x 1/4" PLATE
- ⑥ 2-1/2"x 2-1/2"x 1/4" TUBING

NOTE: ALL STEEL TO BE SAW OR MACHINE CUT.



SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



**VALVE STEM
 EXTENSION**

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

09



**SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO**
STANDARD DETAILS



JOINT RESTRAINT TABLE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

10A

THRUST RESTRAINT TABLE BENDS, TEES, CAPS/VALVES, & REDUCERS (RESTRAINED JOINT LENGTHS IN FEET)															
DIAMETER (IN.)	HORIZONTAL BENDS						CAPS / PLUGS / VALVES L _R	SIZE (IN.) Lg/ Sm/ Run X Br.	TEES						REDUCERS L _R
	11-1/4° L _R	22-1/2° L _R	45° L _R	90° L _R	Run L _R	Branch L _R			Run L _R	Branch L _R	Run L _R	Branch L _R	Run L _R	Branch L _R	
4	FJO	2	5	12	34	4 X 4	FJO	28	5	8	10	FJO	N/A		
6	2	3	7	17	47	6 X 6	FJO	42	5	21	10	FJO	N/A		
8	2	4	9	23	62	6 X 4	FJO	26	5	FJO	10	FJO	24		
10	3	5	11	27	75	8 X 8	FJO	57	5	36	10	10	N/A		
12	3	6	13	32	88	8 X 6	FJO	40	5	13	10	FJO	26		
						8 X 4	FJO	23	5	FJO	10	FJO	45		
						10 X 10	FJO	69	5	48	10	21	N/A		
						10 X 8	FJO	55	5	29	10	FJO	25		
						10 X 6	FJO	39	5	4	10	FJO	46		
						10 X 4	FJO	21	5	FJO	10	FJO	61		
						12 X 12	FJO	83	5	61	10	34	N/A		
						12 X 10	FJO	68	5	42	10	10	43		
						12 X 8	FJO	54	5	22	10	FJO	47		
						12 X 6	FJO	37	5	FJO	10	FJO	64		
						12 X 4	FJO	18	5	FJO	10	FJO	77		

DIAMETER (IN.)	VERTICAL BENDS					
	11-1/4° L _R	22-1/2° L _R	45° L _R	90° L _R	TOP/BOTTOM	TOP/BOTTOM
4	3 / 2	7 / 4	14 / 9	N/A		
6	5 / 3	9 / 6	20 / 12	N/A		
8	6 / 4	12 / 7	26 / 15	N/A		
10	7 / 4	15 / 9	31 / 18	N/A		
12	9 / 5	18 / 10	37 / 21	N/A		

Table: This table is based on the EBAA Iron Megalug joint calculations program with the following input criteria: 3.5 ft. depth of bury (conservative); trench type 4; PVC pipe material; GM soil type; 150 psi test pressure; 1.5 safety factor. Specific calculations for restrained lengths are required for conditions not covered by this table.

L_R: Length of restrained pipe, in feet, for each side of the fitting.

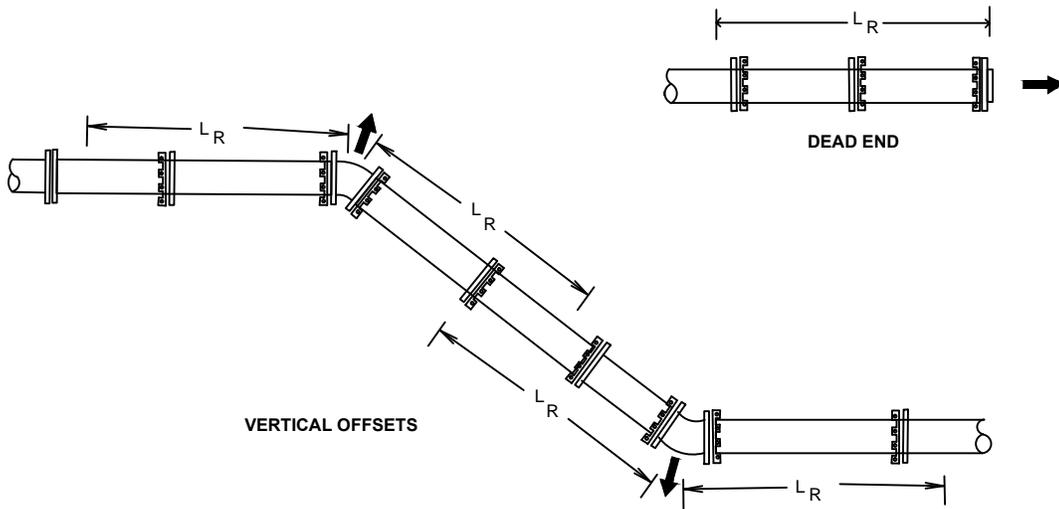
Minimum Restrained Length: A minimum restrained length of 5 ft. from the fitting joint is recommended. Vertical offsets shall be completely restrained between the top vertical fitting and the bottom vertical fitting.

FJO: Fitting Joint Only -- This includes at least a 1 ft. length of restrained pipe beyond the fitting joint.

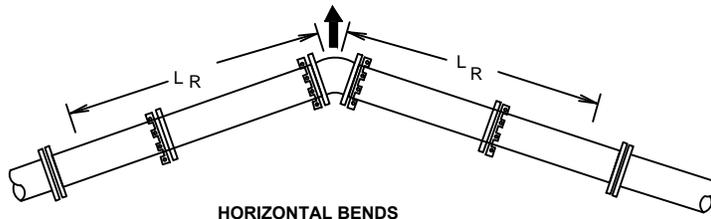
Vertical Offset: Use 11-1/2° bends or 22-1/2° bends wherever possible due to the shorter restrained length requirements.

Caps/Plugs: Concrete blocking may be required by SDCW on a case-by-case basis in addition to mechanical restraint.

Pipe Lengths: Piping shall be laid out to minimize pipe joints near fittings. Wherever possible, full 20 ft. pipe lengths shall be utilized when connecting to fittings or valves. No pipe bell joints shall be used where fittings are less than 20 ft. apart.



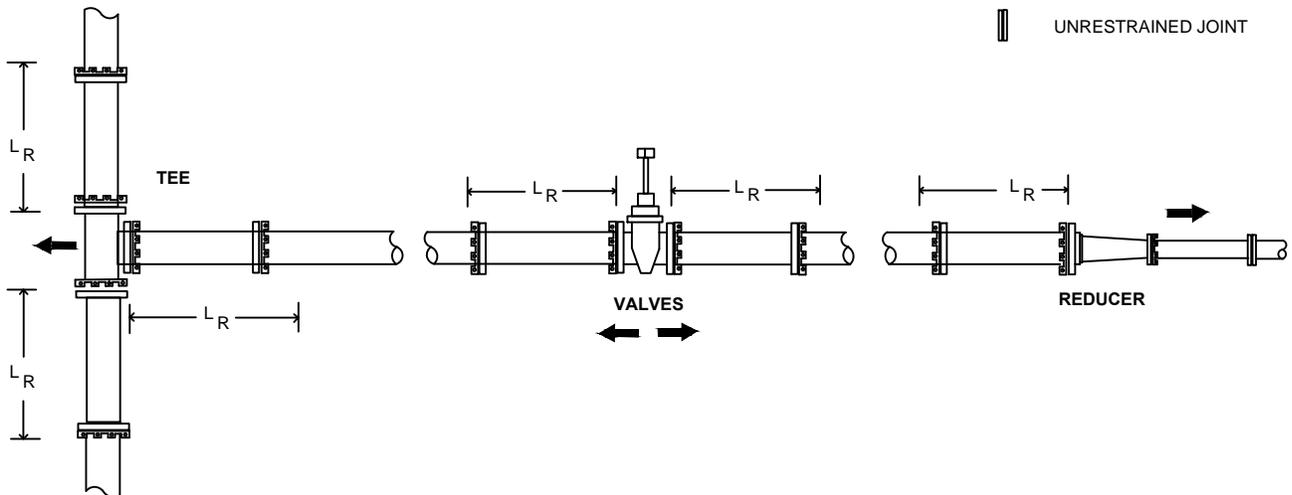
VERTICAL OFFSETS



HORIZONTAL BENDS

LEGEND

- THRUST DIRECTION
- L_R PIPE LENGTH REQUIRING RESTRAINTS
- RESTRAINED JOINT
- UNRESTRAINED JOINT



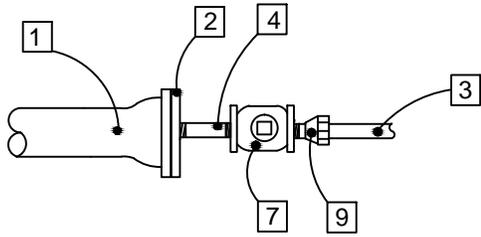
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



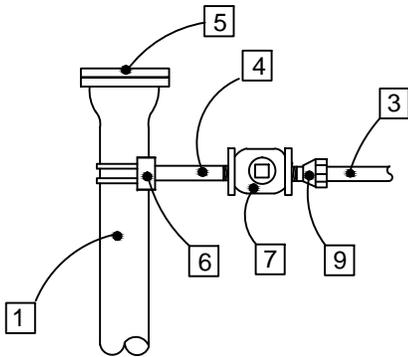
JOINT RESTRAINT TABLE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

10B

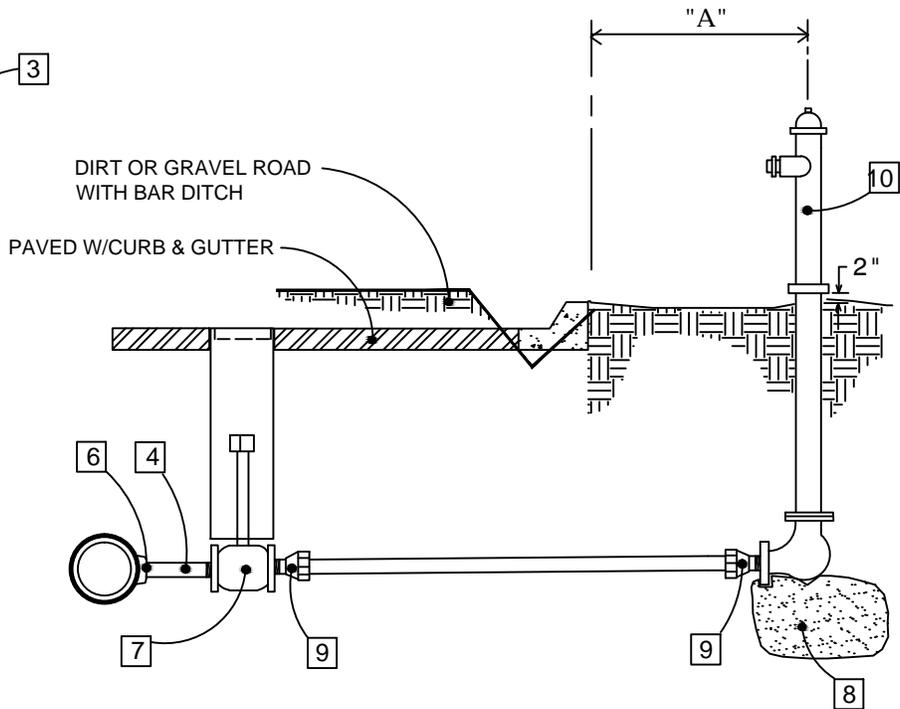


THREADED CONNECTION AT CAP



CONNECTION WITH TAP/SERVICE SADDLE

CONNECTION AT MAIN



TYPICAL INSTALLATION

KEYED NOTES

- 1 RESTRAINED DEAD END MAIN
- 2 MJ CAP/PLUG W / 2" TAP
- 3 2" TYPE-K COPPER
- 4 2" BRASS NIPPLE
- 5 MJ CAP/PLUG
- 6 2" SERVICE SADDLE W / IPS THREADS
- 7 2" HEAVY DUTY THREADED GATE VALVE W / BOX
- 8 1/4 YARD OF GRAVEL AT DRAIN
- 9 ADAPTER: 2" COMPRESSION x 2" MIP
- 10 2-1/4" POST TYPE HYDRANT WITH SANTA FE THREADS

CONSTRUCTION NOTES

- 1. DIMENSION "A" IS TYPICAL 18" BACK OF CURB TO VALVE IN PAVED AREAS AND IS MINIMUM OF 18" BEHIND BAR DITCH IN UNPAVED AREAS BUT CAN BE EXTENDED UP TO 72" TO FIT FIELD CONDITIONS.

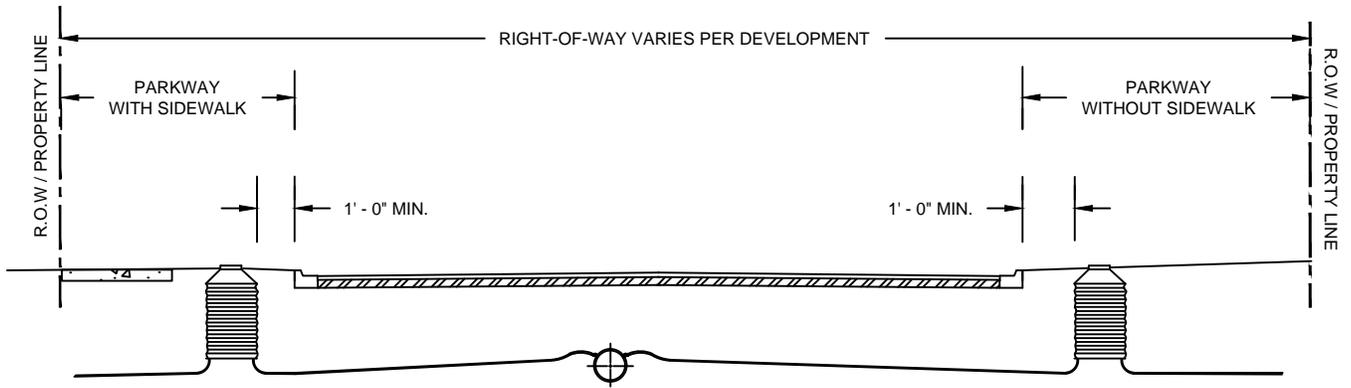


SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



**FLUSH
 HYDRANT**

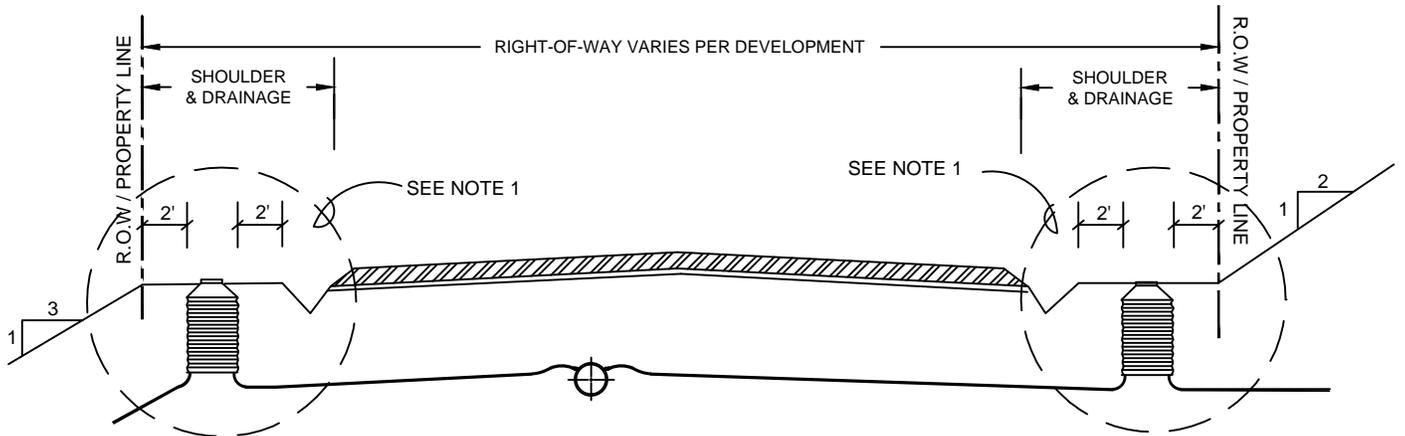
DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



CONSTRUCTION NOTES

1. METER COVER TO BE FLUSH WITH TOP OF CURB.
2. SERVICE INSTALLATION SHALL BE RUN PERPENDICULAR TO WATER MAIN.

PAVED STREETS WITH CURB



CONSTRUCTION NOTES

1. DO NOT LOCATE METER CANS OR FIRE HYDRANTS IN SLOPES UNLESS APPROVED BY SDCW AND BENCHING IS PROVIDED AS SHOWN. A MINIMUM BENCH OF 2' SHALL BE PROVIDED ALL AROUND AS SHOWN.
2. SERVICE INSTALLATION SHALL BE RUN PERPENDICULAR TO WATER MAIN.

PAVED STREETS WITHOUT CURB



SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS

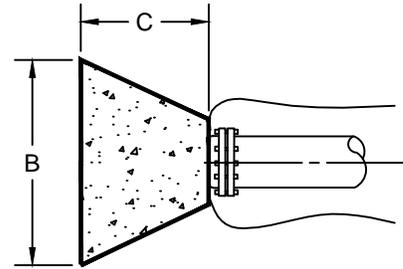
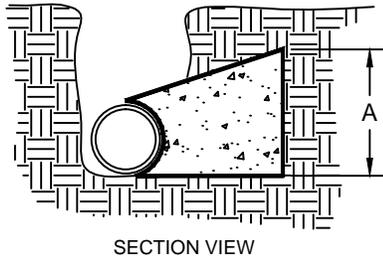
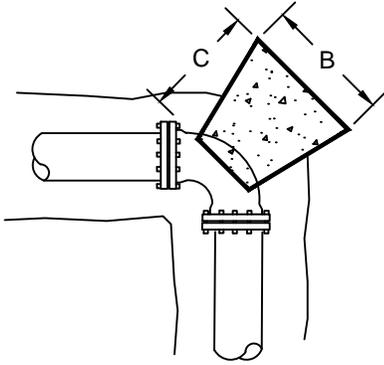


**SERVICE LOCATION
 DETAIL**

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

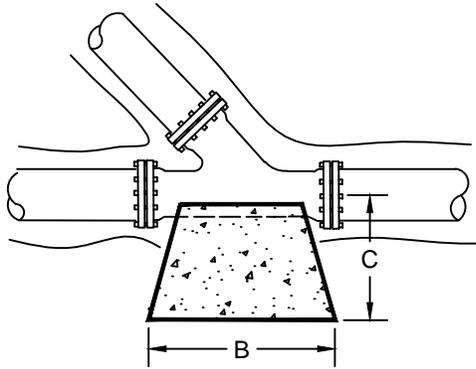
12

USE MECHANICALLY RESTRAINED FITTINGS & PIPE JOINTS FOR THRUST RESTRAINT UNLESS CONCRETE BLOCKING IS SPECIFICALLY CALLED FOR BY SDCW.

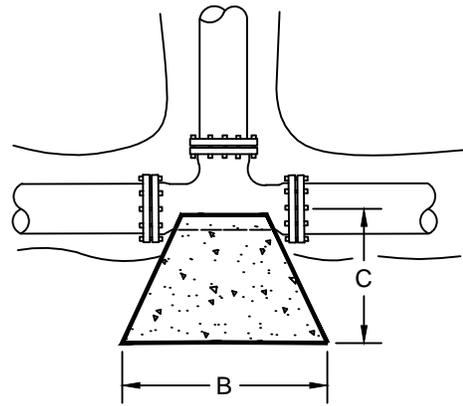


TYPE "A"

DEAD END (TYPE "B")



BRANCH WYE (TYPE "B")



TEE (TYPE "B")

THRUST BLOCK SIZING TABLE

PIPE DIAMETER	TYPE "A" BENDS												TYPE "B" FITTINGS		
	11-1/4°			22-1/2°			45°			90°			A	B	C
	A	B	C	A	B	C	A	B	C	A	B	C			
4"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6"	12	12	12	12	12	12	12	18	12	18	24	12	12	24	12
8"	12	12	12	12	18	12	18	24	12	24	30	18	18	30	12
10"	12	12	12	12	24	12	20	30	12	24	42	18	24	36	18
12"	12	18	12	18	24	12	24	36	18	32	48	24	24	42	18
14"	12	24	12	18	36	18	30	42	24	36	60	24	30	48	24
16"	18	24	24	24	36	24	30	40	24	42	66	24	36	54	24
18"	18	30	24	24	40	24	36	54	24	48	72	24	42	60	24
20"	20	30	24	30	42	24	42	60	24	54	80	24	42	76	24
24"	24	36	24	36	54	24	48	72	24	66	96	30	54	80	30

1. TABLE BASED ON 200 P.S.I. (130 P.S.I. WORKING PRESSURE) AND 3000 LB/FT² ALLOWABLE SOIL BEARING PRESSURE.
2. USE TEE OUTLET DIAMETER TO DETERMINE THRUST BLOCK SIZING. USE BRANCH DIAMETER ON WYE TO DETERMINE THRUST BLOCK SIZING.
3. THE "C" DIMENSION LISTED IS A MINIMUM DIMENSION. CONCRETE BLOCKING MUST BE POURED TO THE UNDISTURBED SOIL OF THE TRENCH WALL.

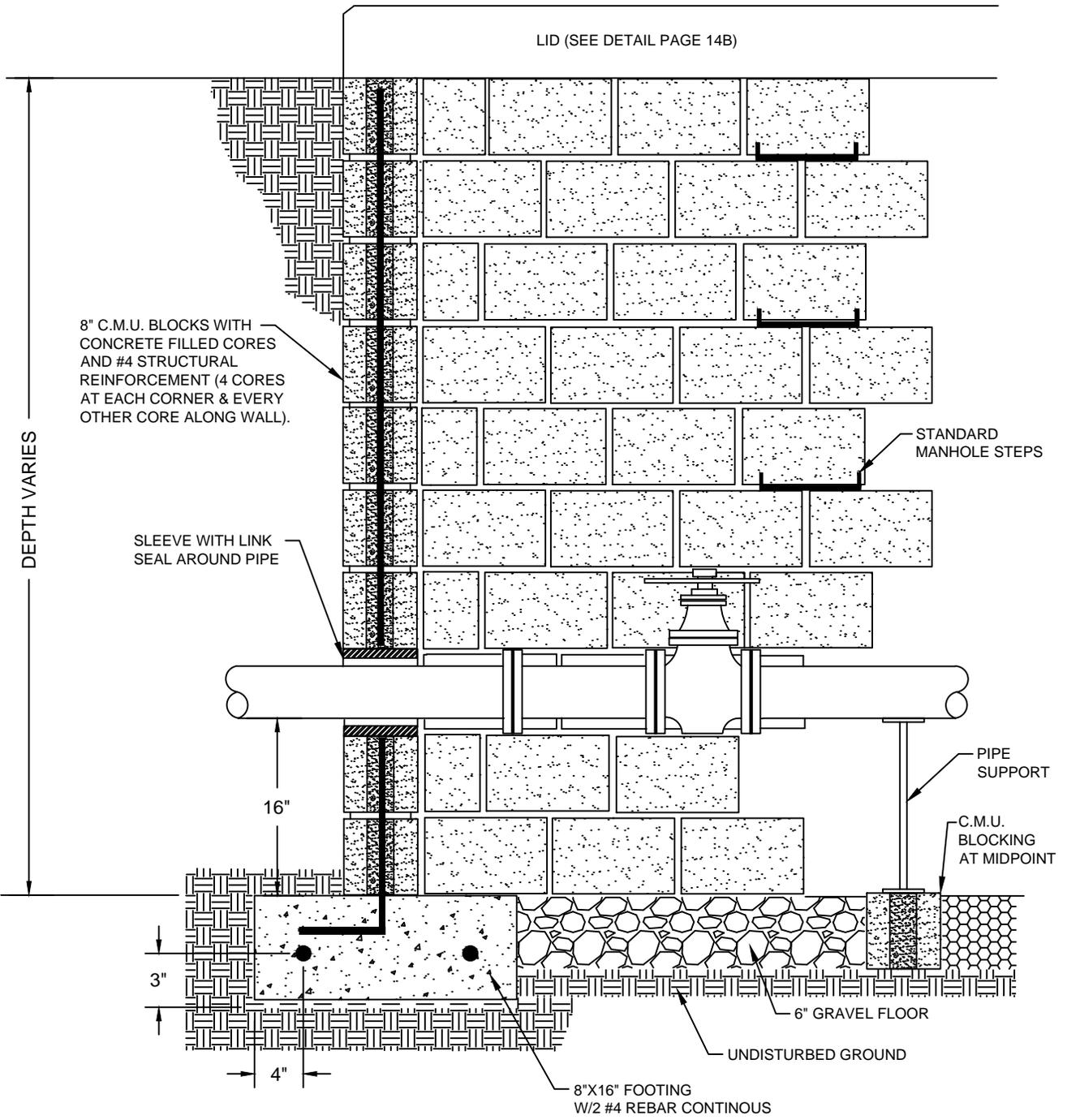


SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



CONCRETE THRUST BLOCKING

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



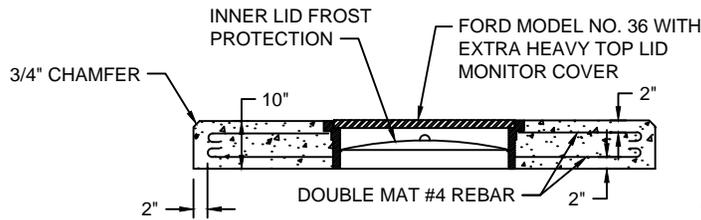
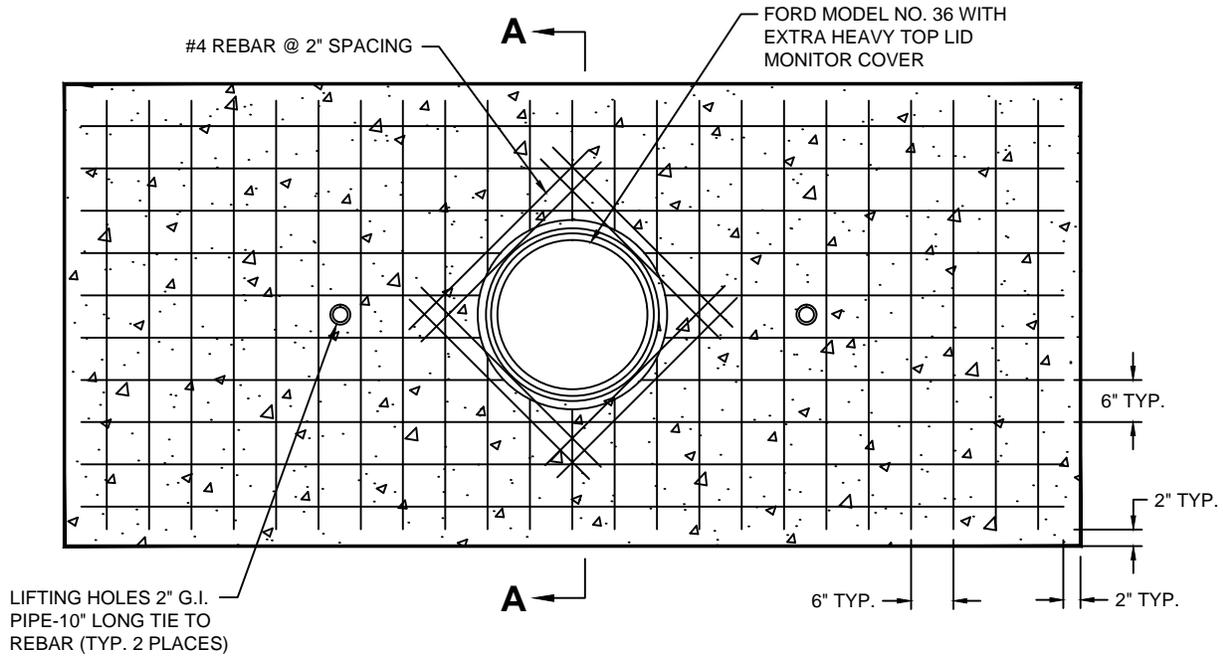
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



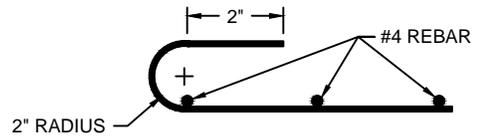
CMU VAULT

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

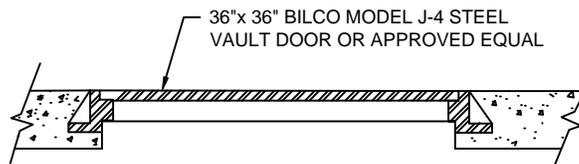
14A



CROSS SECTION A-A



REBAR DETAIL



ALTERNATIVE VAULT DOOR

1. LID TO BE CAST INTO SECTIONS WEIGHING A MAXIMUM OF 4,000 LBS. EACH SECTION TO HAVE TWO (2) LIFTING HOLES.
2. THIS IS A GENERAL DETAIL. EACH PIT WILL HAVE A SPECIFIC DETAIL DRAWING ISSUED FOR CONSTRUCTION.



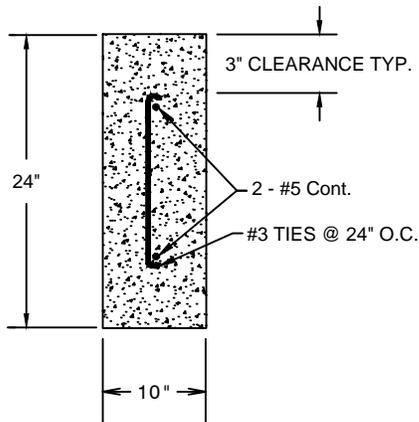
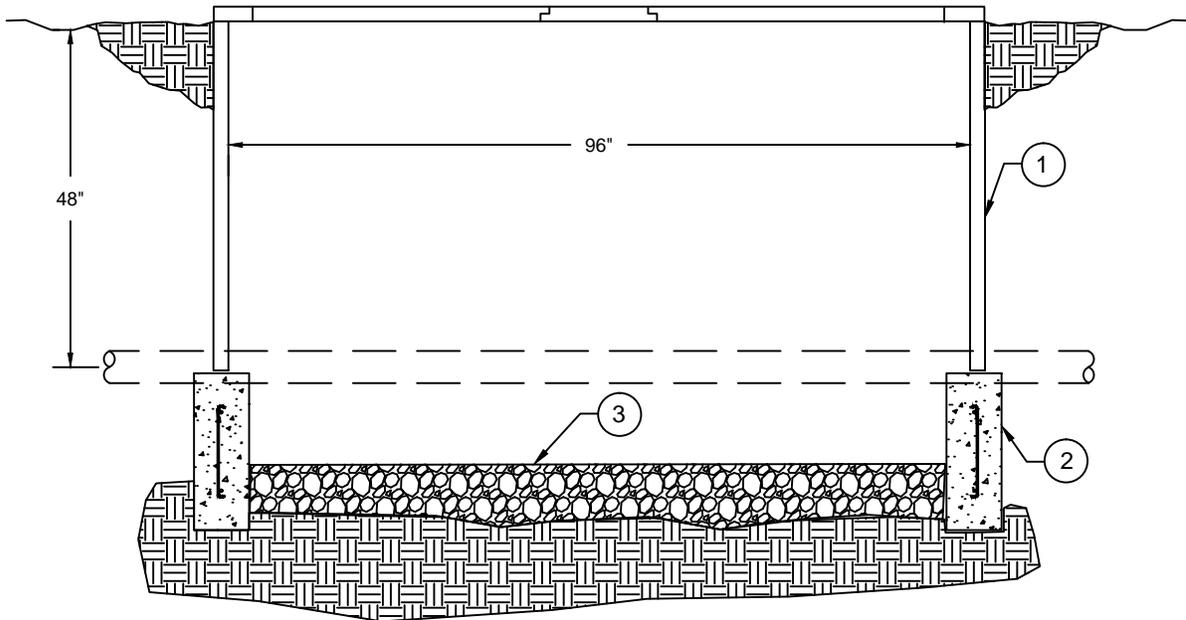
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



CMU VAULT

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

14B



CONCRETE FOOTING DETAIL

- ① Prefabricated Vault 48" x 96" x 48"
(Per Material Specifications)
- ② Concrete Footing
- ③ Gravel Floor 3/4" Crushed - 6" Thick

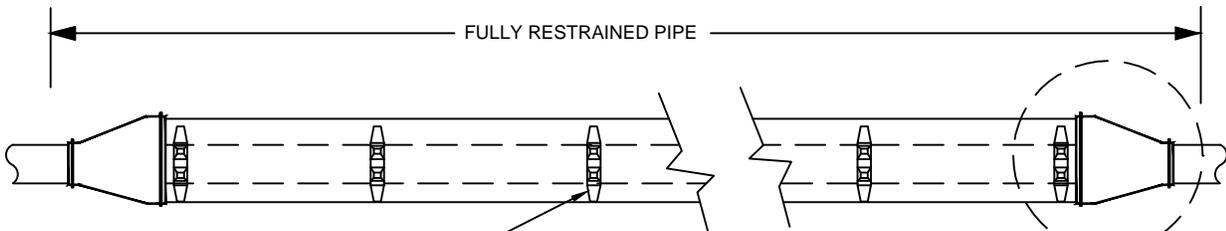
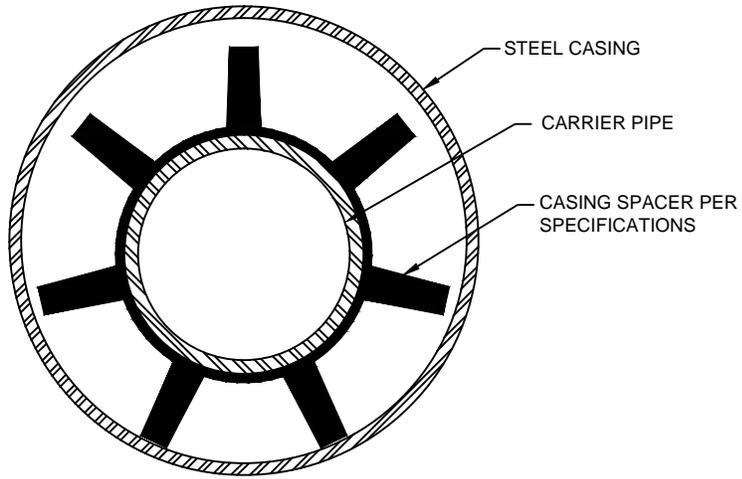


SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS

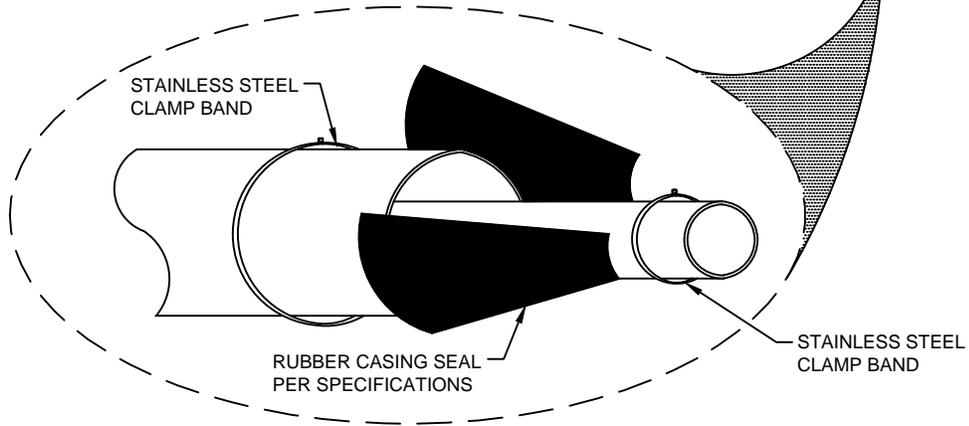


PREFABRICATED VAULT

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



NUMBER OF SPACERS PER MANUFACTURER REQUIREMENTS. IN NO CASE LESS THAN THREE SPACERS PER PIPE SEGMENT BETWEEN JOINTS.



CASING SIZE VERSUS CARRIER SIZE

Carrier Pipe (Nominal Size)	Steel Casing Diameter and Wall Thickness
6"	14" Schedule 30
8"	16" Schedule 30
10"	18" Standard Class
12"	22" Standard Class
14"	26" Schedule 20
16"	28" Schedule 20
20"	30" 0.375" Wall
24"	36" 0.375" Wall
3/4"-2" Cu Tubing	4" Schedule 40 PVC
3/4"-2" Cu Tubing	4" Schedule 40 Steel



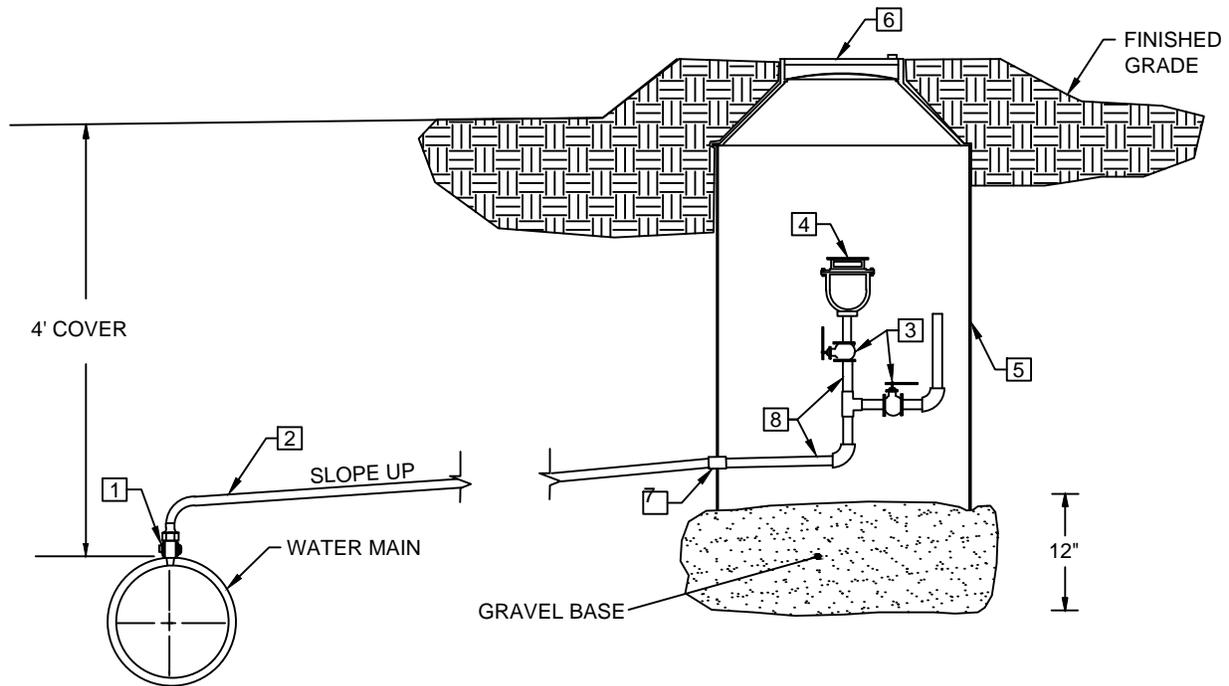
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO

STANDARD DETAILS



PIPE CASING DETAIL

DRAWN BY: JJA	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



ITEM	DESCRIPTION
------	-------------

- | | |
|---|--|
| 1 | 1" OR 2" TAPPING SADDLE
1" OR 2" CORPORATION COCK (A.W.W.A. TAPERED THREAD) |
| 2 | 1" OR 2" TYPE K COPPER |
| 3 | 1" OR 2" BRASS BALL VALVE |
| 4 | 1" OR 2" NPT COMBINATION AIR & VACUUM UNIT VALVE & PRESSURE UNIT:
CRISPIN C10 OR C20 WITH PROTECT-TOP |
| 5 | 36" x 36" -20# POLYETHYLENE METER BOX |
| 6 | 36" MONITOR RING WITH 20" COVER WITH INNER LID |
| 7 | 1" OR 2" ADAPTER COUPLING |
| 8 | 1" OR 2" THREADED BRASS PIPE |

LOCATION: WHERE WATER MAIN IS INSTALLED IN ROAD, THE AIR-VACUUM VALVE INSTALLATION SHALL BE LOCATED OUT OF THE PAVEMENT AND OUT OF BAR DITCH, BUT WITHIN RIGHT-OF-WAY OR EASEMENT.



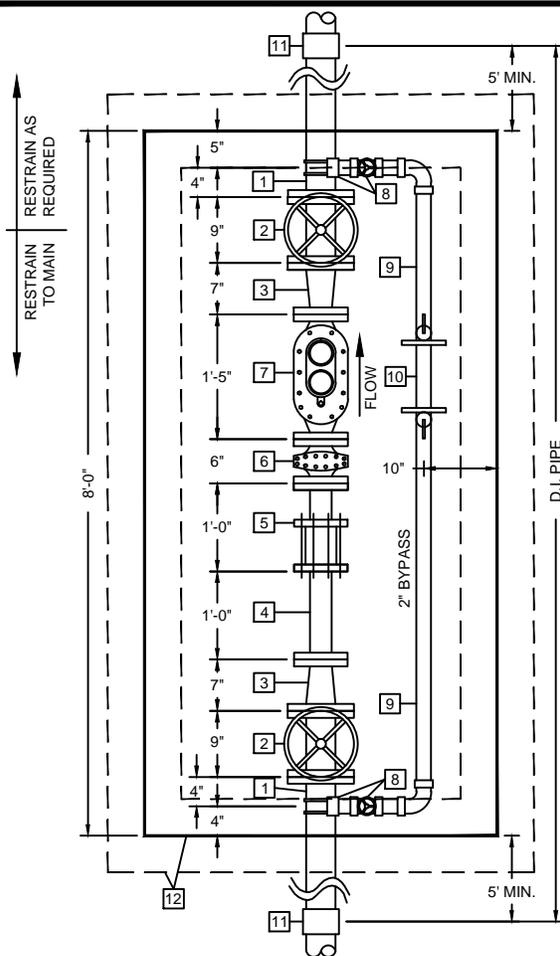
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



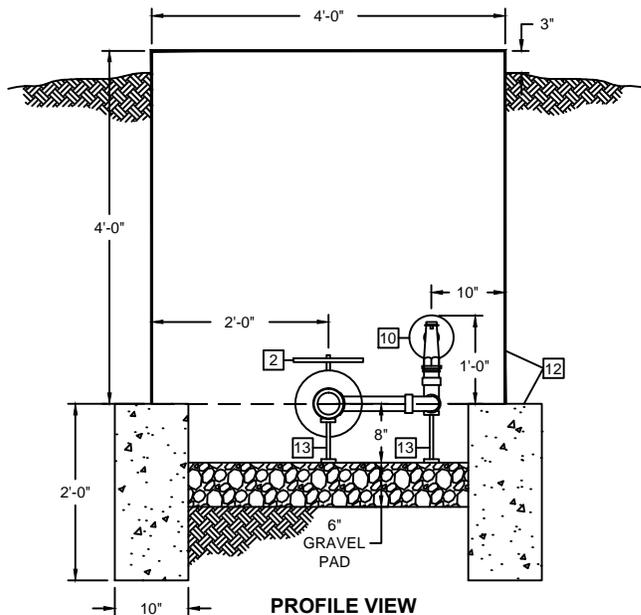
**1" AND 2"
 AIR-VACUUM VALVE**

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

17



PLAN VIEW



PROFILE VIEW

ITEM

- 1 4" FLG x PE CONNECTION PIECE
- 2 4" FLG GATE VALVE W/ HANDWHEEL
- 3 4" x 3" FLG REDUCER
- 4 3" FLG x PE CONNECTION PIECE
- 5 3" FLG COUPLING ADAPTER
- 6 3" FLG METER STRAINER (FURNISHED & INSTALLED BY SDCW)
- 7 3" COMPOUND WATER METER (FURNISHED & INSTALLED BY SDCW)
- 8 4" x 2" SERVICE SADDLE W/ 2" CORP. STOP STYLE BALL VALVE
- 9 2" TYPE K RIGID COPPER & FITTINGS
- 10 2" PREFABRICATED METER SETTER W/ 2" BALL ANGLE VALVES (PER SDCW DETAIL)
- 11 SOLID SLEEVE CONNECTION BETWEEN DUCTILE IRON PIPE AND EXISTING PIPE
- 12 4' x 4' x 8" PREFABRICATED VAULT W/ CONCRETE FOUNDATION (PER SDCW DETAIL)
- 13 PIPE SUPPORT

NOTES

1. CONTRACTOR SHALL USE 12"Wx12"Lx6"H CONCRETE BLOCK AND PIPE JACK STYLE SUPPORT BOLTED INTO CONCRETE WITH LAG BOLTS. TWO (2) SUPPORTS SHALL BE INSTALLED FOR MAIN LINE AND TWO (2) SUPPORTS SHALL BE INSTALLED FOR BYPASS.
2. CONTRACTOR SHALL LOCATE METER VAULT BEHIND CURB & GUTTER IN AREA THAT IS NOT SUBJECT TO VEHICULAR TRAFFIC.
3. CONTRACTOR SHALL SLOPE GRADE AWAY FROM THE VAULT.
4. CONTRACTOR SHALL INSTALL COMPRESSION FITTINGS FOR 2" BYPASS PIPING.
5. CONTRACTOR SHALL INSTALL FOUR (4) ALLTHREADS AT METER LOCATION TO MAINTAIN METER OPENING AND PIPING ALIGNMENT.



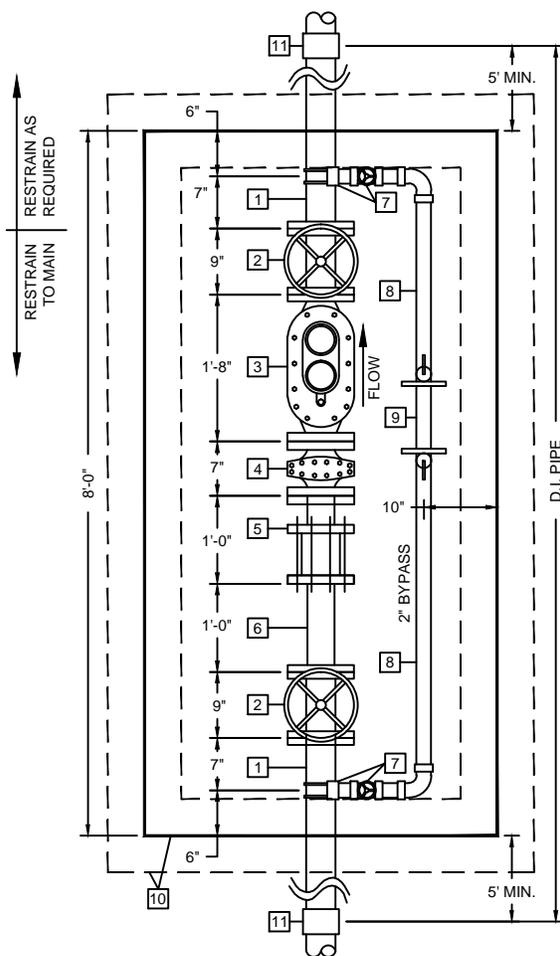
**SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO**

STANDARD DETAILS

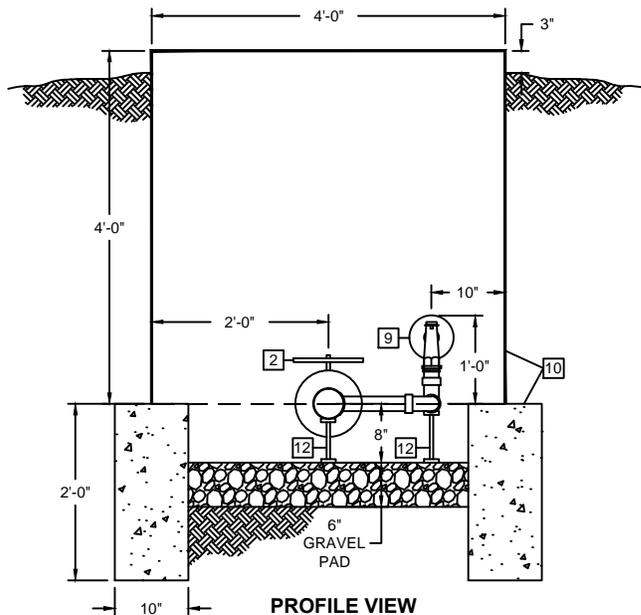


3" DOMESTIC SERVICE

DRAWN BY: SAR	DATE: 09/2008
CHECKED:	SCALE: 1" = 2'
APPROVED:	



PLAN VIEW



PROFILE VIEW

ITEM

- 1 4" FLG x PE CONNECTION PIECE
- 2 4" FLG GATE VALVE W/ HANDWHEEL
- 3 4" COMPUND METER (FURNISHED & INSTALLED BY SDCW)
- 4 4" FLG METER STRAINER (FURNISHED & INSTALLED BY SDCW)
- 5 4" FLG COUPLING ADAPTER
- 6 4" FLG x PE CONNECTION PIECE
- 7 4" x 2" SERVICE SADDLE W/ 2" CORP. STOP TYPE BALL VALVE
- 8 2" TYPE K RIGID COPPER & FITTINGS
- 9 2" PREFABRICATED METER SETTER W/ 2" BALL VALVES (PER SDCW DETAIL)
- 10 4' x 8' PREFABRICATED VAULT W/ CONCRETE FOUNDATION (PER SDCW DETAIL)
- 11 SOLID SLEEVE CONNECTION BETWEEN DUCTILE IRON PIPE AND EXISTING PIPE.
- 12 PIPE SUPPORT

NOTES

1. CONTRACTOR SHALL USE 12"Wx12"Lx6"H CONCRETE BLOCK AND PIPE JACK STYLE SUPPORT BOLTED INTO CONCRETE WITH LAG BOLTS. TWO (2) SUPPORTS SHALL BE INSTALLED FOR MAIN LINE AND TWO (2) SUPPORTS SHALL BE INSTALLED FOR BYPASS.
2. CONTRACTOR SHALL LOCATE METER VAULT BEHIND CURB & GUTTER IN AREA THAT IS NOT SUBJECT TO VEHICULAR TRAFFIC.
3. CONTRACTOR SHALL SLOPE GRADE AWAY FROM THE VAULT.
4. CONTRACTOR SHALL INSTALL COMPRESSION FITTINGS FOR 2" BYPASS PIPING.
5. CONTRACTOR SHALL INSTALL FOUR (4) ALLTHREADS AT METER LOCATION TO MAINTAIN METER OPENING AND PIPING ALIGNMENT.



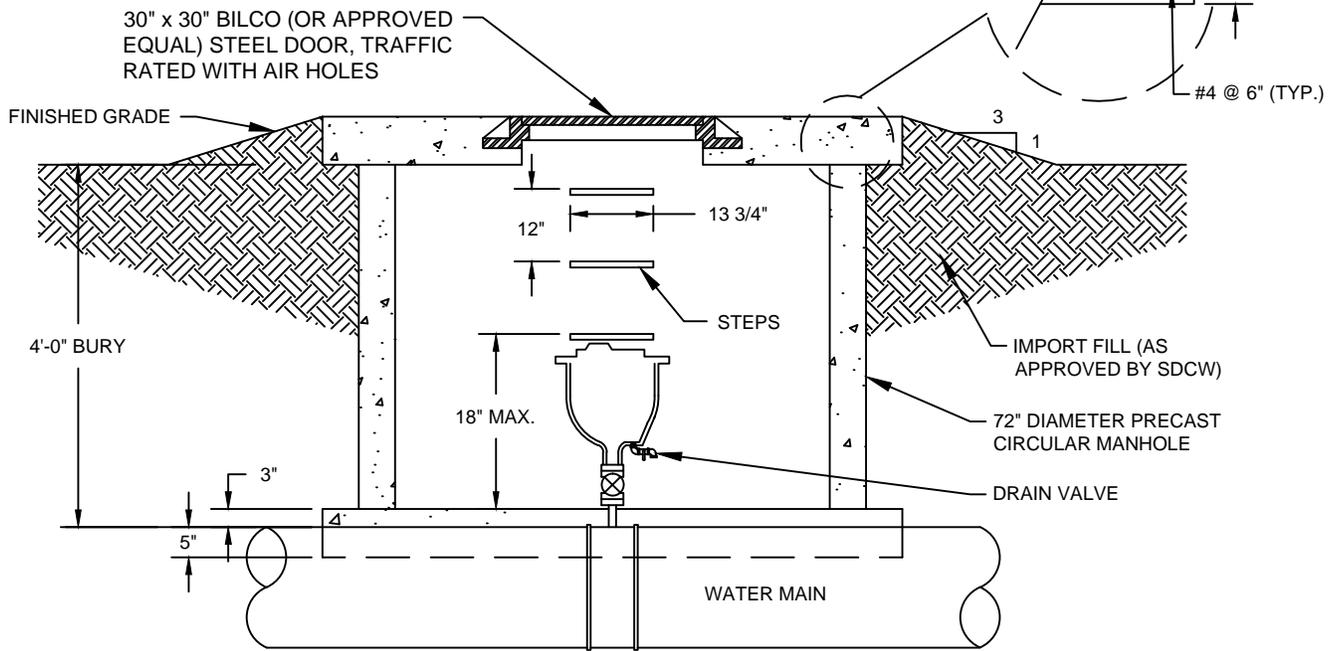
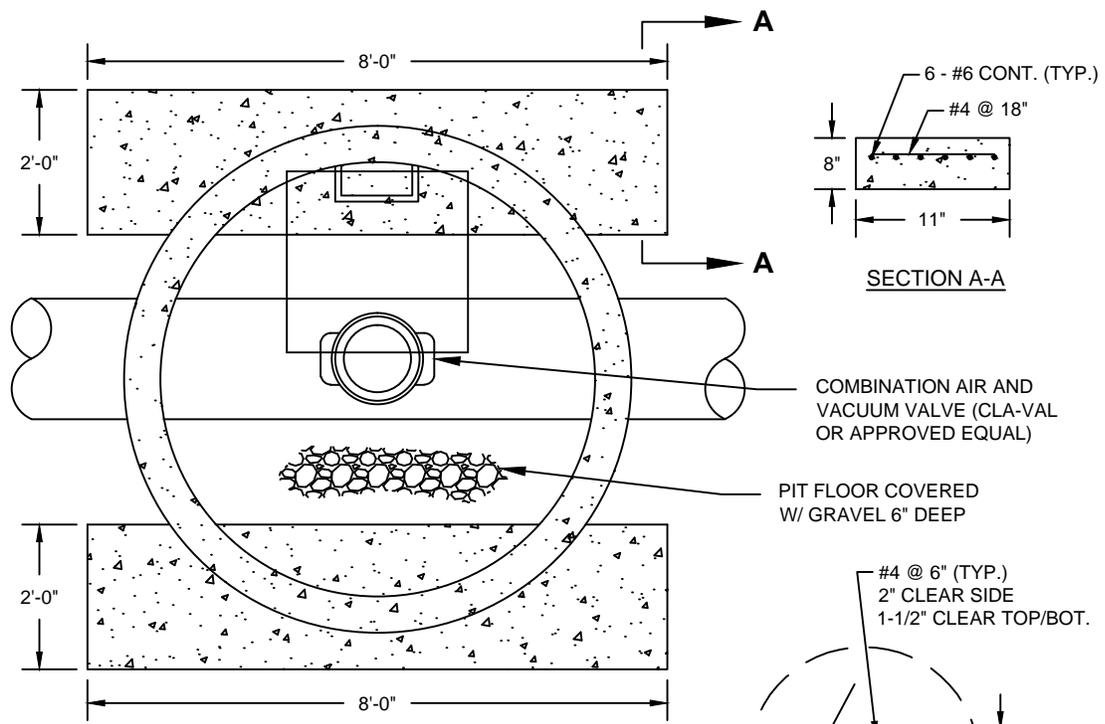
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO

STANDARD DETAILS



4" DOMESTIC SERVICE

DRAWN BY: SAR	DATE: 09/2008
CHECKED:	SCALE: 1" = 2'
APPROVED:	



NOTE:

1. 3" (MODEL 363CAV332FT, CL125 FLANGE), 4" (MODEL MTP364/34.116.3, CL250 FLANGE/MODEL MTP364/34.332, CL125 FLANGE) & 6" (MODEL MTP366/34.116.3, CL250 FLANGE/MODEL MTP366/34.332, CL125 FLANGE) AIR & VACUUM VALVES SHALL BE MANUFACTURED BY CLA-VAL (OR APPROVED EQUAL).



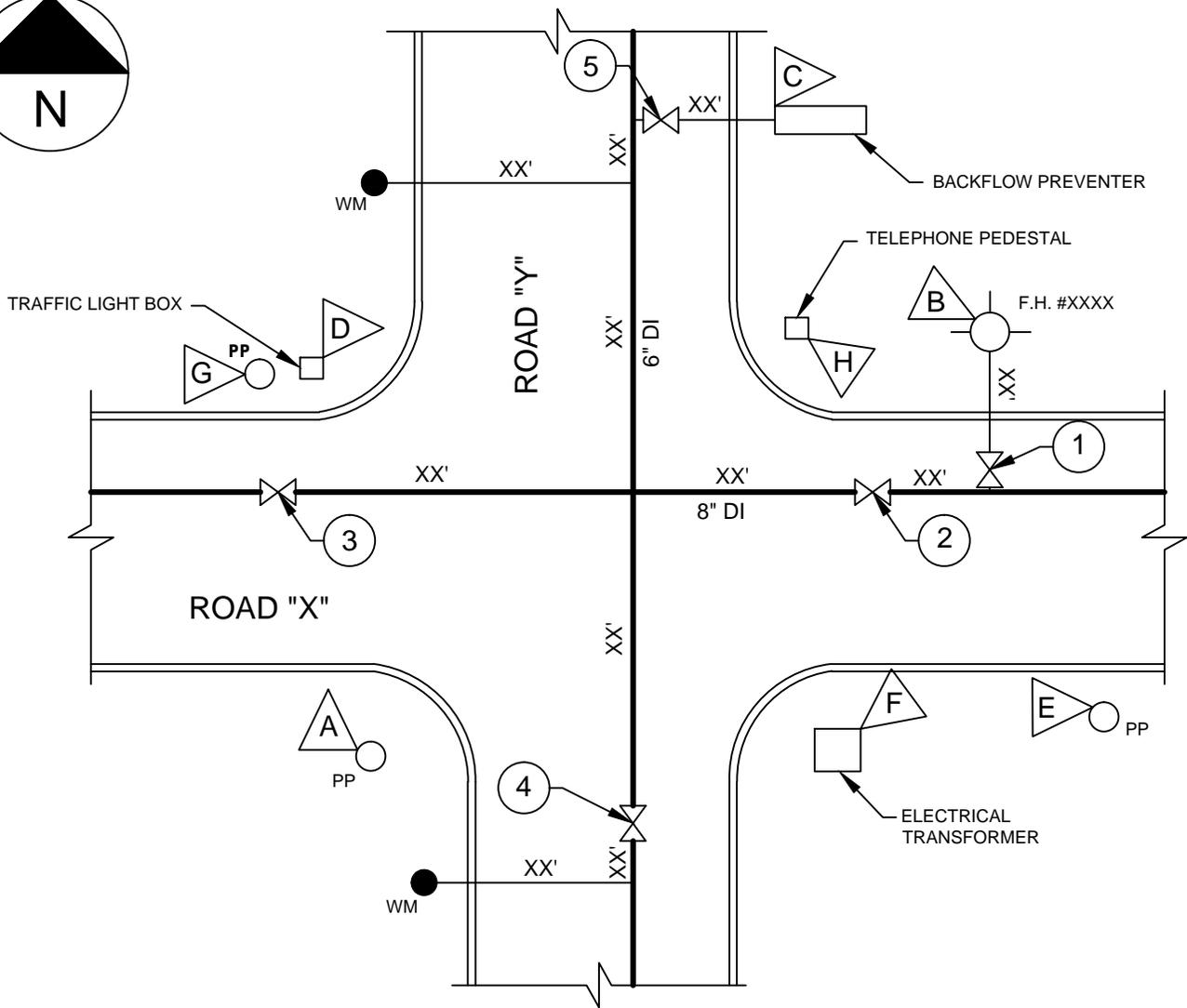
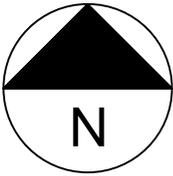
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO

STANDARD DETAILS



**3" and Larger Air-Vacuum
 Valve Vault**

DRAWN BY: BKS	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



FROM POINT	TO VALVE				
	①	②	③	④	⑤
▲			XX'XX"	XX'XX"	
▲	XX'XX"	XX'XX"			
▲					XX'XX"
▲			XX'XX"		XX'XX"
▲	XX'XX"	XX'XX"			
▲	XX'XX"	XX'XX"		XX'XX"	
▲			XX'XX"		
▲				XX'XX"	XX'XX"

$\frac{1}{2}''$
 $\frac{1}{4}''$

VALVE REFERENCING NOTES:

- (1) ALL VALVES SHALL BE REFERENCED DURING CONSTRUCTION WITH 3 SWING TIES FROM SUITABLE REFERENCED POINTS AND THE TIES RECORDED ON THE CONSTRUCTION DRAWING.
- (2) ALL REFERENCE POINTS SHALL BE EASILY FIELD IDENTIFIED AND SHALL CONSIST OF: PERMAMENT LAND MARKS (IE.FIRE HYDRANTS, POWER POLES, ELECTRIC TRANSFORMERS, TELEPHONE PEDESTALS, ETC.) THAT WILL NOT BE RELOCATED OR REMOVED DURING CONSTRUCTION.
- (3) ALL FIRE HYDRANT VALVES SHALL BE REFERENCED WITH A DIMENSION FROM THE CENTER OF THE HYDRANT TO THE VALVE BOX AND SHALL HAVE A MINIMUM OF ONE (1) SWING TIE FROM A SEPARATE REFERENCE POINT.

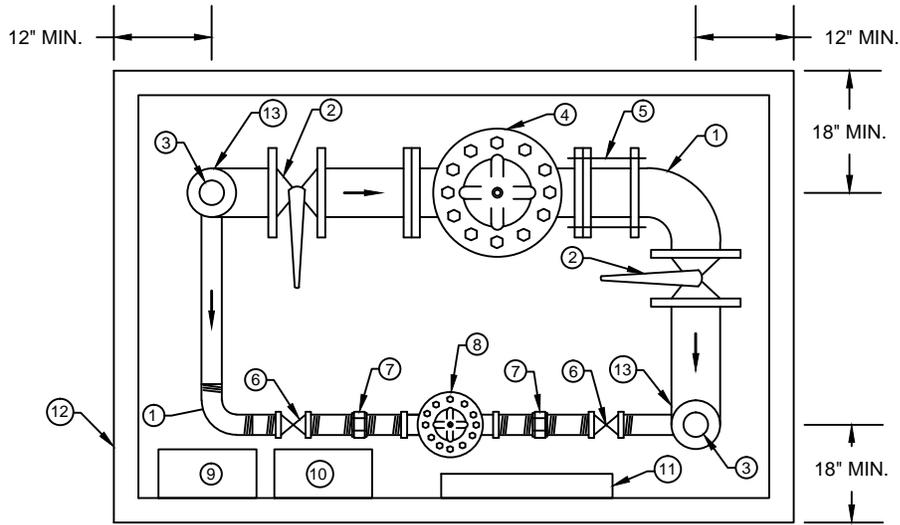


SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS

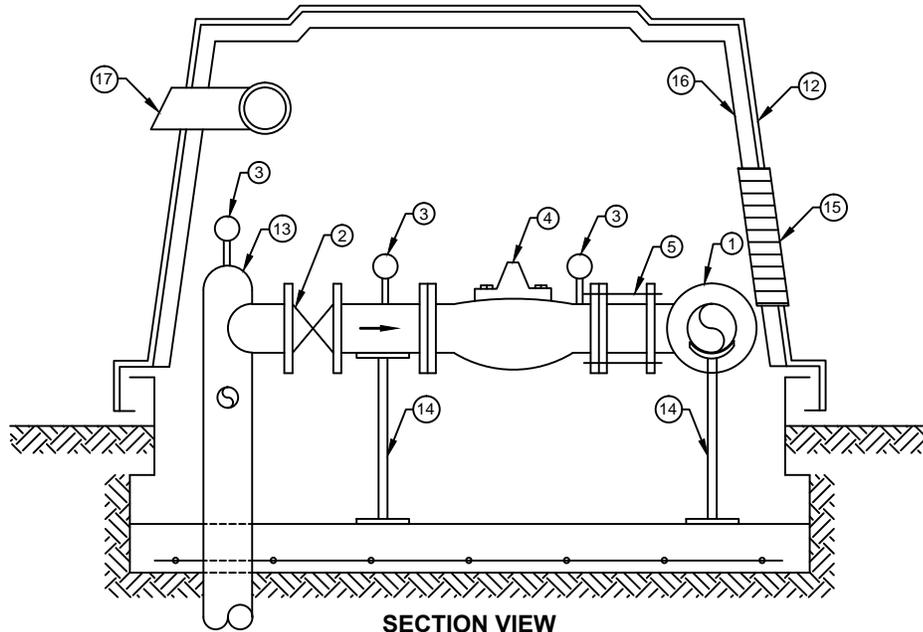


VALVE REFERENCE MAP

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



PLAN VIEW



SECTION VIEW

EQUIPMENT LIST

- | | |
|--|--------------------------------------|
| ① 90° ELBOW | ⑩ POWER PANEL W/ TWO (2) GFI OUTLETS |
| ② BUTTERFLY VALVE | ⑪ PRESSURE GAUGE MOUNTING PANEL |
| ③ PRESSURE GAUGE | ⑫ PREFABRICATED ENCLOSURE |
| ④ PRESSURE REDUCING VALVE (SIZED FOR HIGH DEMAND FLOW RATES) | ⑬ WELDED TEE RISER |
| ⑤ FLANGE COUPLING ADAPTER | ⑭ PIPE SUPPORT |
| ⑥ BALL VALVE | ⑮ AIR VENT |
| ⑦ UNION | ⑯ FOAM INSULATION |
| ⑧ PRESSURE REDUCING VALVE (SIZED FOR LOW DEMAND FLOW RATES) | ⑰ EXHAUST FAN |
| ⑨ HEATER UNIT | ⑱ CONCRETE SLAB |

NOTES:

1. PRESSURE GAUGES SHALL BE 4" OIL FILLED GAUGES AND MOUNTED ON PRESSURE GAUGE MOUNTING PANEL (SEE DETAIL).
2. PRESSURE REDUCING VALVES SHALL BE CLA-VAL (MODEL 90-01AB) OR APPROVED EQUAL.
3. PRESSURE REDUCING VALVE VAULTS SHALL BE ABOVE GRADE VAULTS AS MANUFACTURED BY ENGINEER FLUID INC., CANARIS, OR APPROVED EQUAL.
4. SACRIFICIAL ANODE IS REQUIRED FOR CATHODIC PROTECTION ON PREFABRICATED ENCLOSURE BASE.
5. ENCLOSURE SHALL BE PAINTED PER MANUFACTURER RECOMMENDATION WITH COLOR APPROVED BY SDCW.
6. CONCRETE SLAB SHALL BE 6-INCHES THICK WITH #5 REBAR AT 12" O.C. FOR REINFORCEMENT.



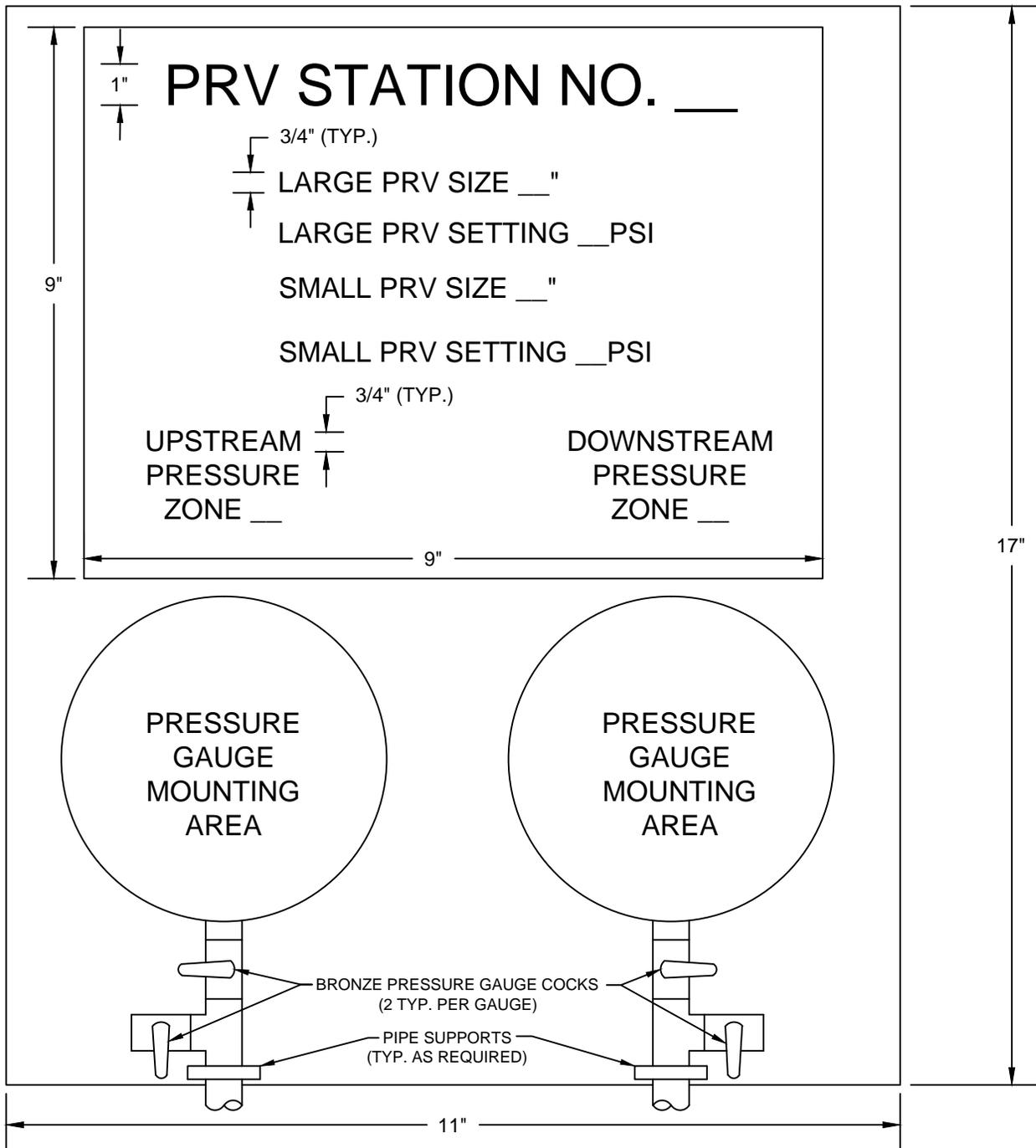
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO

STANDARD DETAILS



PRESSURE REDUCING VALVE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	



NOTES:

1. PRESSURE GAUGE MOUNTING PLATE SHALL BE CONSTRUCTED OF $\frac{3}{16}$ " ALUMINUM.
2. MOUNTING PLATE SHALL BE MOUNTED TO WALL USING $\frac{13}{16}$ " DEPTH x $\frac{13}{16}$ " WIDE UNISTRUT AND FOUR (4) $\frac{3}{8}$ " DIA. x 2- $\frac{1}{2}$ " LONG SS LAG BOLTS WITH LAG SHIELD FOR CONCRETE.
3. LABEL PLATE SHALL BE STAINLESS STEEL ACID ETCHED AND COLOR FILLED.



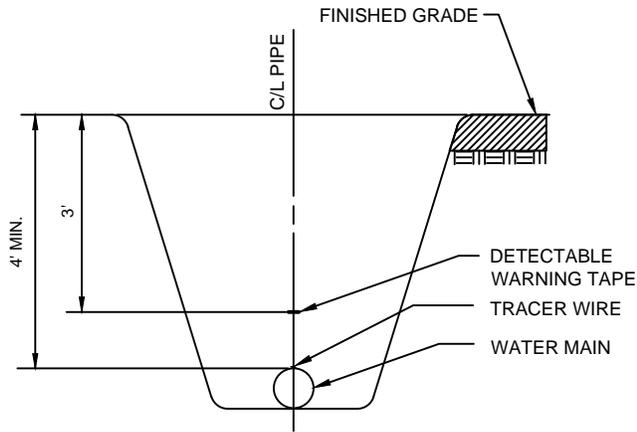
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



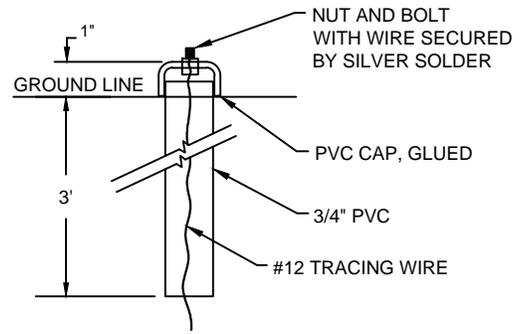
**PRV PRESSURE GAUGE
 MOUNT DETAIL**

DRAWN BY: BKS	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

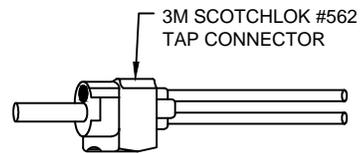
23



TRENCH CROSS SECTION

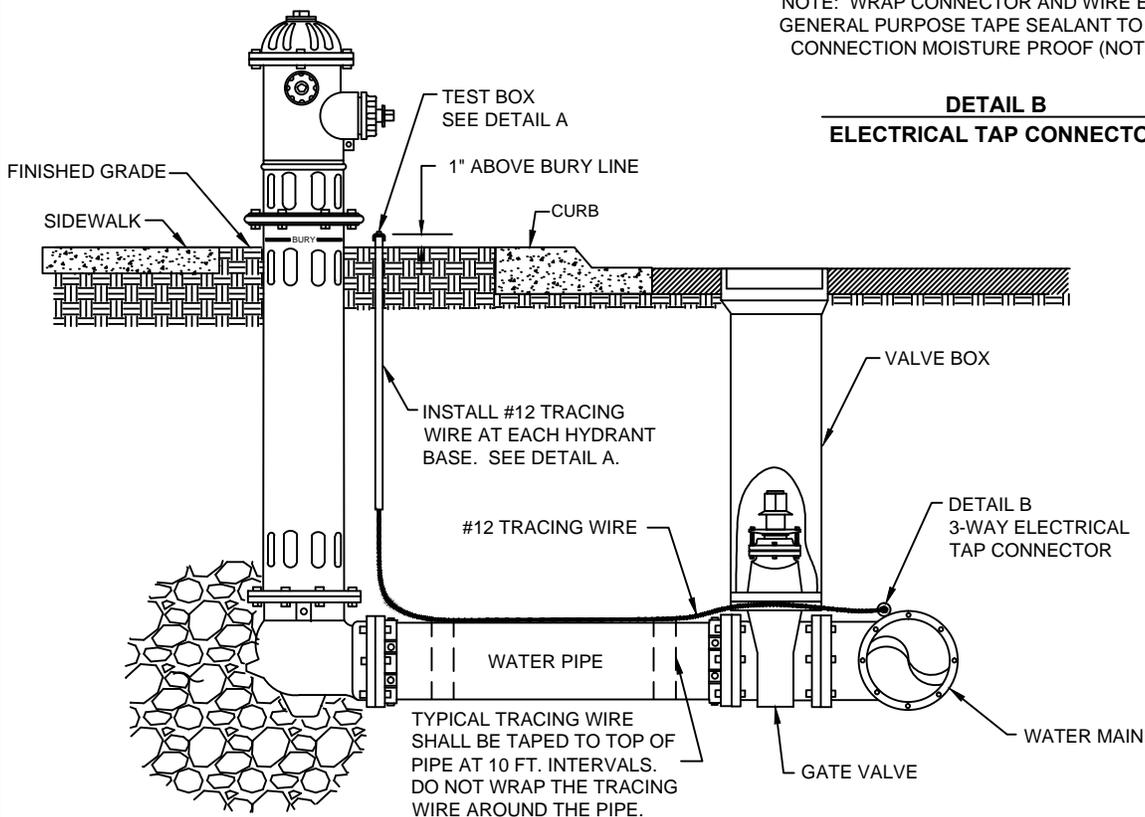


**DETAIL A
TEST BOX**



NOTE: WRAP CONNECTOR AND WIRE ENDS WITH GENERAL PURPOSE TAPE SEALANT TO MAKE THE CONNECTION MOISTURE PROOF (NOT SHOWN).

**DETAIL B
ELECTRICAL TAP CONNECTOR**



TRACING WIRE DESIGN AND DETAILS COURTESY OF PEAK POWER ENGINEERING, INC. 1309 AGUA FRIA, SANTA FE, NM 87501

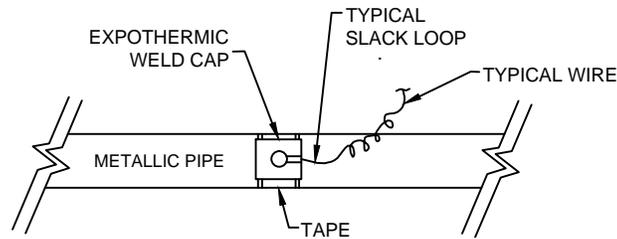
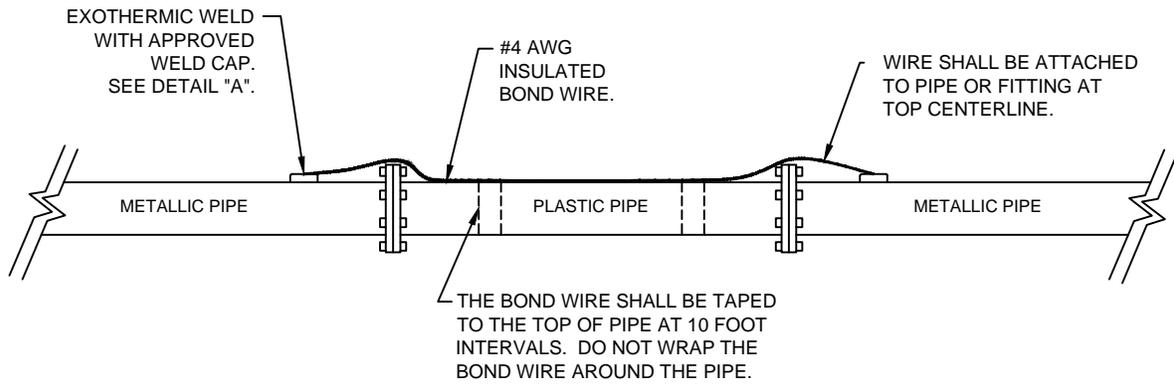


SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



TRACING WIRE DETAIL

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	



DETAIL "A"

DRAWING COURTESY OF PEAK POWER ENGINEERING, INC.
1309 AGUA FRIA, SANTA FE, NM 87501



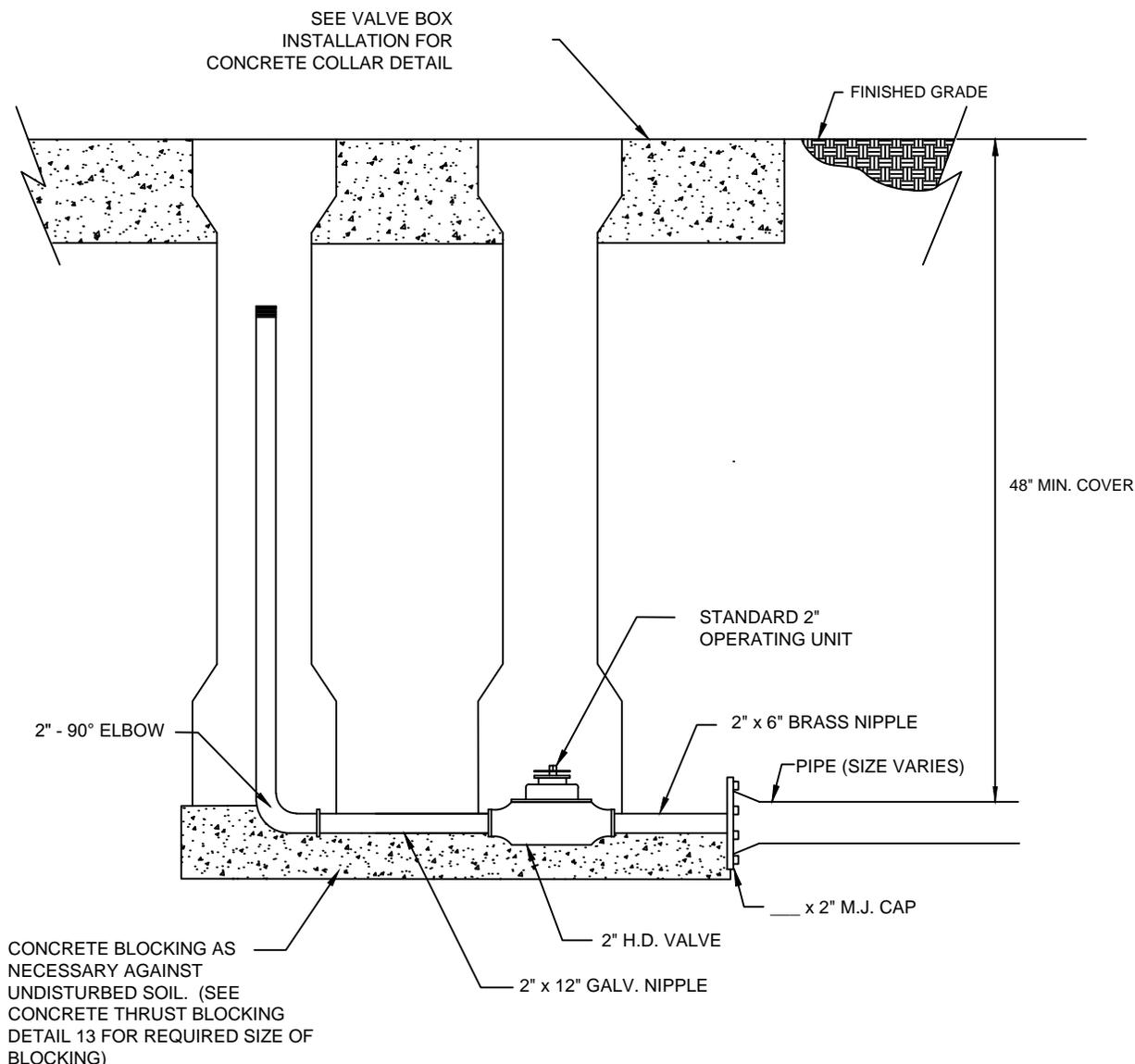
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



BONDING JUMPER DETAIL

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

25



NOTES:

1. BLOW-OFF VALVES ARE TO BE USED ONLY WHEN SPECIFIED BY SDCW.
2. WRAP END OF PIPE, CAP, AND BLOW-OFF VALVE ASSEMBLY WITH 4 MIL. POLYETHYLENE SHEETING PRIOR TO REPLACEMENT OF CONCRETE BLOCKING.



SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
 STANDARD DETAILS



2" BLOW-OFF VALVE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

EXHIBIT V - CONSTRUCTION DRAWINGS

CITY OF SANTA FE

PUBLIC UTILITIES DEPARTMENT

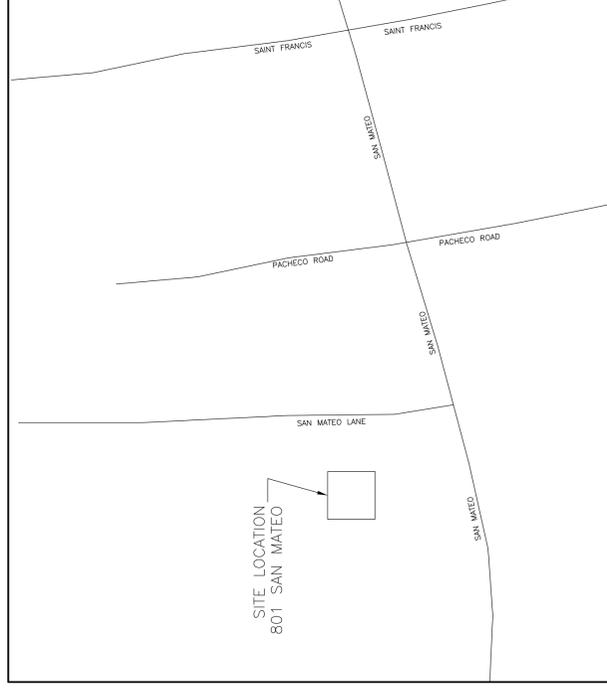


801 SAN MATEO

ELECTRICAL SERVICE UPGRADE

PHOTOVOLTAIC SYSTEM

MARCH 28, 2014



VICINITY MAP

LIST OF DRAWINGS

- E00 TITLE SHEET
- E10 ELECTRICAL SERVICE UPGRADE - SITE PLAN
- E20 ELECTRICAL SERVICE - DEMOLITION
- E30 ELECTRICAL SERVICE - NEW WORK
- E40 ELECTRICAL SERVICE RISER DIAGRAM
- E50 ELECTRICAL SCHEDULES
- EG10 VEHICLE GATE ELECTRICAL PLAN
- EL10 ELECTRICAL SITE LIGHTING PLAN
- EL20 CANOPY ELECTRICAL DETAILS
- PV10 PHOTOVOLTAIC SYSTEM - SITE PLAN
- PV20 PHOTOVOLTAIC SYSTEM - ONE-LINE DIAGRAM
- PV30 PHOTOVOLTAIC SYSTEM - THREE-LINE DIAGRAM
- PV40 PV INTERCONNECTION - THREE-LINE DIAGRAM

CASH ALLOWANCES	
UTILITY PAYMENT CASH ALLOWANCE	CONTRACTOR SHALL INCLUDE IN HIS BID A CASH ALLOWANCE OF \$10,000 TO COVER PAYMENTS TO PNM ELECTRIC FOR WORK RELATED TO THE SERVICE UPGRADE.
	SUMS FROM THIS CASH ALLOWANCE TO BE EXPENDED BY CHANGE ORDER AT OWNER'S DISCRETION.
CONTINGENCY CASH ALLOWANCE	CONTRACTOR SHALL INCLUDE IN HIS BID A CASH ALLOWANCE OF \$10,000 TO COVER CONSTRUCTION CONTINGENCIES.
	SUMS FROM THIS CASH ALLOWANCE TO BE EXPENDED BY CHANGE ORDER AT OWNER'S DISCRETION.

GENERAL ELECTRICAL NOTES

- WORK COVERED BY THESE DRAWINGS CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, SUPPLIES AND MATERIALS, AND PERFORMING ALL OPERATIONS, INCLUDING CUTTING, CHANNELING, AND UNDERGROUND SYSTEMS AS INDICATED.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMAN LIKE MANNER IN FULL ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRIC SAFETY CODE (NESC), AND LOCAL AND STATE SAFETY CODES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION WITH UTILITY COMPANIES. VERIFY EXACT REQUIREMENTS PRIOR TO ROUGH-IN. THERE SHALL BE NO EXTRA COSTS TO THE OWNER FOR CONTRACTOR'S FAILURE TO COORDINATE UTILITY REQUIREMENTS.
- SHOULD THE CONTRACTOR DETECT ANY DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND LEGAL OR SAFETY REQUIREMENTS FOR THE PROJECT, HE SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING, ONCE NOTIFIED, THE ENGINEER SHALL MODIFY THE CONTRACT DOCUMENTS ACCORDINGLY. IF THE CONTRACTOR PROCEEDS WITH ANY WORK WHICH IS IN VARIANCE OF KNOWN LEGAL OR SAFETY REQUIREMENTS, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THIS WORK AND SHALL PROMPTLY CORRECT THE WORK WHEN NOTIFIED WITHOUT ADDITIONAL COST TO THE OWNER.
- ALL WIRE AND CABLE SHALL BE INSTALLED IN APPROVED RACEWAY, UNLESS OTHERWISE SPECIFIED, RACEWAY SHALL BE EMT CONDUIT, 1/2 INCH.
- NOT USED
- ALL WIRING SHALL BE COPPER, THHN/THWN INSULATION. MINIMUM CONDUCTOR SIZE SHALL BE #12.
- EXTERIOR WIRING AND DEVICES SHALL BE INSTALLED IN CONDUIT WITH WEATHER-TIGHT FITTINGS AND IN WEATHER-TIGHT BOXES.
- ALL METALLIC RACEWAY IN CONTACT WITH EARTH SHALL BE COATED. PROVIDE EITHER PLASTIBOND OR 2 LAYERS SCOTCH #51 HALF-LAPPED.

SCOPE OF WORK - 100KW SYSTEM	SCOPE OF WORK - ELECTRICAL SERVICE UPGRADE
<ol style="list-style-type: none"> FURNISH AND INSTALL A 100KW GRID INTERACTIVE PHOTOVOLTAIC SYSTEM. PHOTOVOLTAIC MODULES SHALL BE INSTALLED ON NEW CARPORT STRUCTURES IN EXISTING PUBLIC PARKING AREAS. SYSTEM SHALL INCLUDE CARPORT MOUNTED PV MODULES, DISTRIBUTED INVERTERS, AC CIRCUIT BREAKER PANELS, AND ALL OTHER EQUIPMENT, DEVICES, RACEWAY, AND CABLE FOR A COMPLETE WORKING SYSTEM. PROVIDE NETWORK CABLE AND RACEWAY TO EACH INVERTER FOR MONITORING OF SYSTEM PERFORMANCE AT THE INVERTER LEVEL. ADD NEW UNDER CANOPY LED LUMINAIRES UNDER CARPORT DECK FOR PARKING AREA ILLUMINATION. 	<ol style="list-style-type: none"> COORDINATE WITH UTILITY FOR REMOVAL AND RE-INSTALL OF PADMOUNT TRANSFORMER TO PROVIDE PROPER SAFETY CLEARANCES. COORDINATE WITH UTILITY FOR INSTALLATION OF NEW BUSHING CT METERING. FURNISH AND INSTALL NEW MAIN DISTRIBUTION EQUIPMENT WITH PROVISIONS FOR PV SYSTEM INTERCONNECT. PROVIDE NEW GROUNDED FEEDER CIRCUIT TO BUILDING MAIN BREAKER PANEL. RECONNECT SHOP BUILDINGS TO MAIN DISTRIBUTION.

ENGINEER

PEAK POWER ENGINEERING, INC
 1309 AGUA FRIA
 SANTA FE, NEW MEXICO 87505
 TELE. # (505)-982-7071
 FAX # (505)-982-2274

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274

PROJECT:	13087	DESIGNED BY:	D.G.
FILE:	13087	DRAWN BY:	A.S.
DATE:	3/28/14	CHECKED BY:	D.G.
SCALE:		AS NOTED	

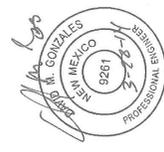
No.	REVISION	BY	APP.	DATE

CITY OF SANTA FE
 801 W. SAN MATEO
 ELECTRICAL SERVICE UPGRADE
 TITLE SHEET



SHEET NO.

E0.0



CITY OF SANTA FE
801 W. SAN MATEO
ELECTRICAL SERVICE UPGRADE
SITE PLAN

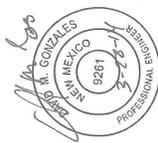
PROJECT:	13087	DESIGNED BY:	D.G.
FILE:	13087	DRAWN BY:	A.S.
DATE:	3/28/14	CHECKED BY:	D.G.
SCALE:	AS NOTED		

PEAK POWER ENGINEERING, INC.
1309 Agua Fria, Santa Fe, NM 87501
TEL 505-982-7071
FAX 505-982-2274



ELECTRICAL SERVICE UPGRADE - SITE PLAN

SCALE: 1" = 40'-0"

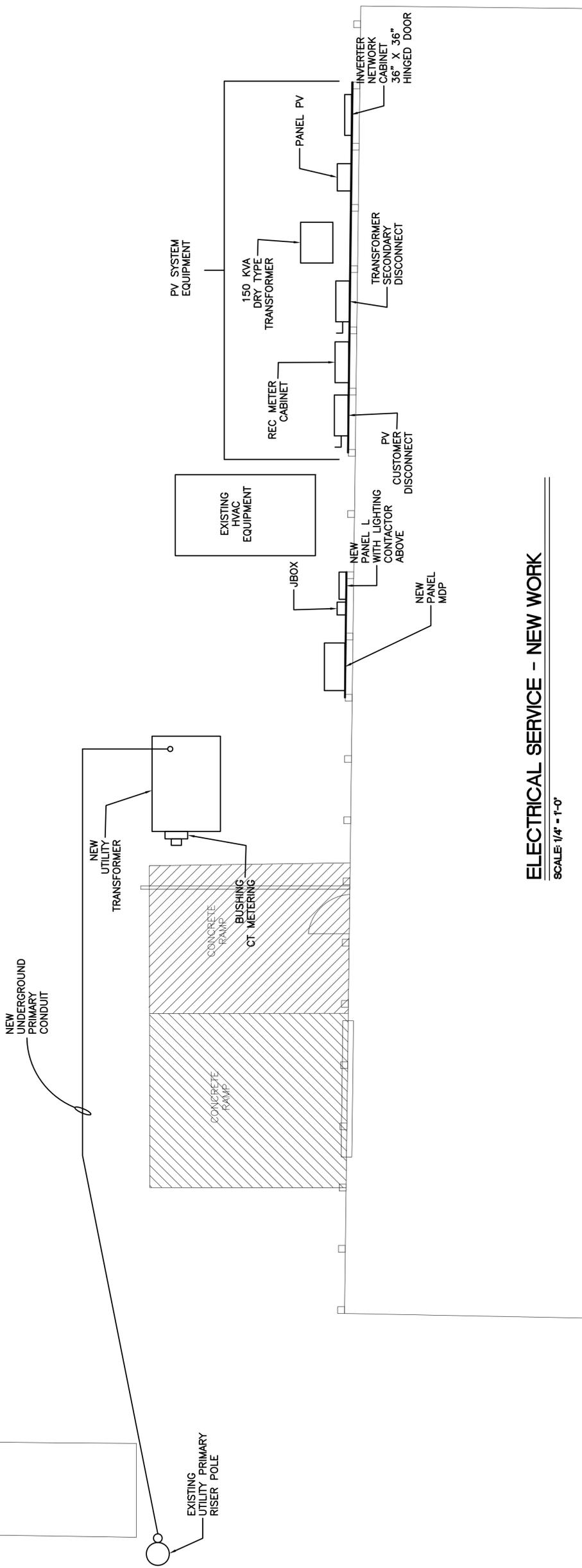


PROJECT: CITY OF SANTA FE
 801 W. SAN MATEO
 ELECTRICAL SERVICE
 NEW WORK

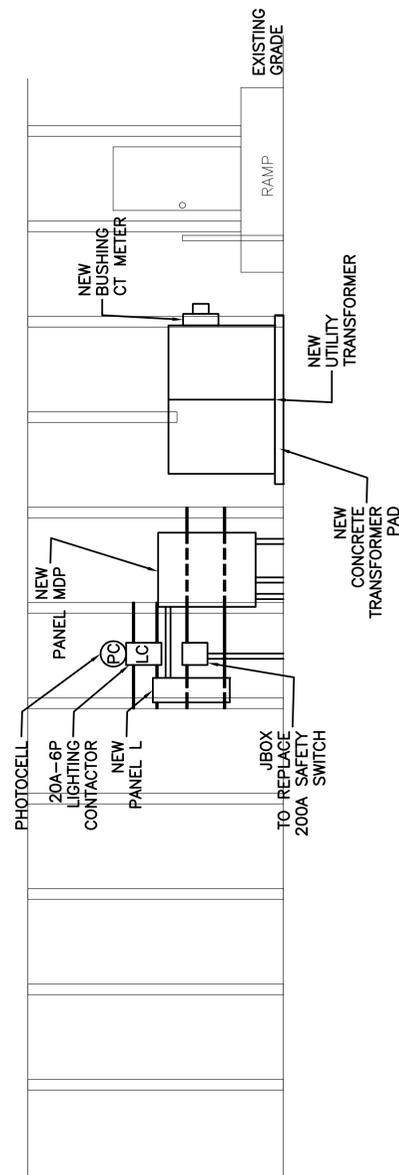
SHEET TITLE:

PROJECT:	13087	DESIGNED BY:	D.G.
FILE:	13087	DRAWN BY:	A.S.
DATE:	3/28/14	CHECKED BY:	D.G.
SCALE:	AS NOTED		

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274



ELECTRICAL SERVICE - NEW WORK
 SCALE: 1/4" = 1'-0"



ELECTRICAL EQUIPMENT ELEVATION - NEW WORK
 SCALE: 1/4" = 1'-0"

FAULT CURRENT ANALYSIS

I_{sc} = Short Circuit Current at the Fault
 I = Current (Amps) Available Short Circuit Current at the Source
 C = Cable Constant
 L = Length of Conductor to fault
 E = Voltage (line to line)
 $\#$ = Number of Conductors per Phase
 $f = (1.732 * L * I) / (C * E * \#)$ "f" Factor
 $M = 1 / (1 + f)$ Multiplier
 $I_{sc} = I * M$

Voltage L-L 208

Circuit Description	Available Fault Current	Conductor Size	Conductors per Phase	Cable Constant	Circuit Length (feet)	"f" factor	Multiplier	SC Current at Fault (amps)
Utility Transformer (150KVA) 120/208V, 2.5% impedance	65,000	350 CU.	4	22736	80	0.48	0.68	44034
Fault Current at MDP								
SERVICE EQUIPMENT RATED 65,000 AIC								

ELECTRICAL LOAD ANALYSIS
UTILITY 12 MONTH PEAK DEMAND
105 KW/521 AMPS
NO NEW LOAD ADDED

Nameplate NEW PANEL L	Voltage LL: 208 VOLTS	BUS Rating: 100 Amps	Voltage LN: 120 VOLTS	3 PHASE, 4 WIRE	Enclosure: NEMA 3R	Mounting: SURFACE	LOAD AMPS			CIRCUIT DESCRIPTION														
							A	B	C	D	E	F	G	H										
PVCANOPY/LTG	8	8	20	1	A	2	20	8	8	2	PVCANOPY/LTG	2	8	20	1	A	2	20	8	8	2	PVCANOPY/LTG		
PVCANOPY/LTG	8	8	20	5	C	6	20	8	8	2	PVCANOPY/LTG	2	8	20	5	C	6	20	8	8	2	PVCANOPY/LTG		
EXISTING CIRCUITS	2	8	20	7	A	8	20	8	8	2	EXISTING CIRCUITS	2	8	20	7	A	8	20	8	8	2	EXISTING CIRCUITS		
EXISTING CIRCUITS	1	6	20	9	B	10	20	6	6	1	EXISTING CIRCUITS	1	6	20	9	B	10	20	6	6	1	EXISTING CIRCUITS		
SPARE	1	6	20	11	C	12	20	6	6	1	EXISTING CIRCUITS	1	6	20	11	C	12	20	6	6	1	EXISTING CIRCUITS		
SPARE	20	13	A	14	20	7	20	7	7	9	GATE OPERATOR	9	7	20	13	A	14	20	7	7	9	GATE OPERATOR		
SPARE	20	15	B	16	3P	20	20	7	7	9	SPARE	9	7	20	15	B	16	3P	20	20	7	7	9	SPARE
SPARE	20	17	C	18	20	20	20	7	7	9	SPARE	9	7	20	17	C	18	20	20	20	7	7	9	SPARE
SPARE	20	19	A	20	20	20	20	7	7	9	SPARE	9	7	20	19	A	20	20	20	20	7	7	9	SPARE
SPARE	20	21	B	22	20	20	20	7	7	9	SPARE	9	7	20	21	B	22	20	20	20	7	7	9	SPARE
SPARE	20	23	C	24	20	20	20	7	7	9	SPARE	9	7	20	23	C	24	20	20	20	7	7	9	SPARE
SPARE	20	25	A	26	20	20	20	7	7	9	SPARE	9	7	20	25	A	26	20	20	20	7	7	9	SPARE
SPARE	20	27	B	28	20	20	20	7	7	9	SPARE	9	7	20	27	B	28	20	20	20	7	7	9	SPARE
SPARE	20	29	C	30	20	20	20	7	7	9	SPARE	9	7	20	29	C	30	20	20	20	7	7	9	SPARE
Subtotal (Amps)	16	14	14	35	35	35	35	23	21	21	Total (Amps)	16	14	14	35	35	35	23	21	21	21	21	21	

LOAD SUMMARY			
Load Category	Dem. (KVA)	Dem. Factor	Crtd
General	2.88	1.00	2.88
Lighting	9.60	1.25	7.68
Receptacles	0.00	1.00	0.00
Dental Equip.	0.00	0.80	0.00
User 2	0.00	1.00	0.00
Motors	2.52	1.00	2.52
Largest Motor	0.00	1.25	0.00
Total KVA	15.00		13.08
Total Amps	41.69		36.35

ACCESSORIES:	YES	NO
Copper Bus	X	
Service Entrance Rated	X	
Door in Door	X	
Thru-Feed Lugs	X	
Top Skirts	X	
Bottom Skirts	X	

CITY OF SANTA FE
801 W. SAN MATEO
ELECTRICAL
SCHEDULES



SHEET NO.

E5.0

PROJECT:	13087	DESIGNED BY:	D.G.	BY:	APP.	DATE:
FILE:	13087	DRAWN BY:	A.S.	REVISION		
DATE:	3/28/14	CHECKED BY:	D.G.			
SCALE:	AS NOTED					

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274



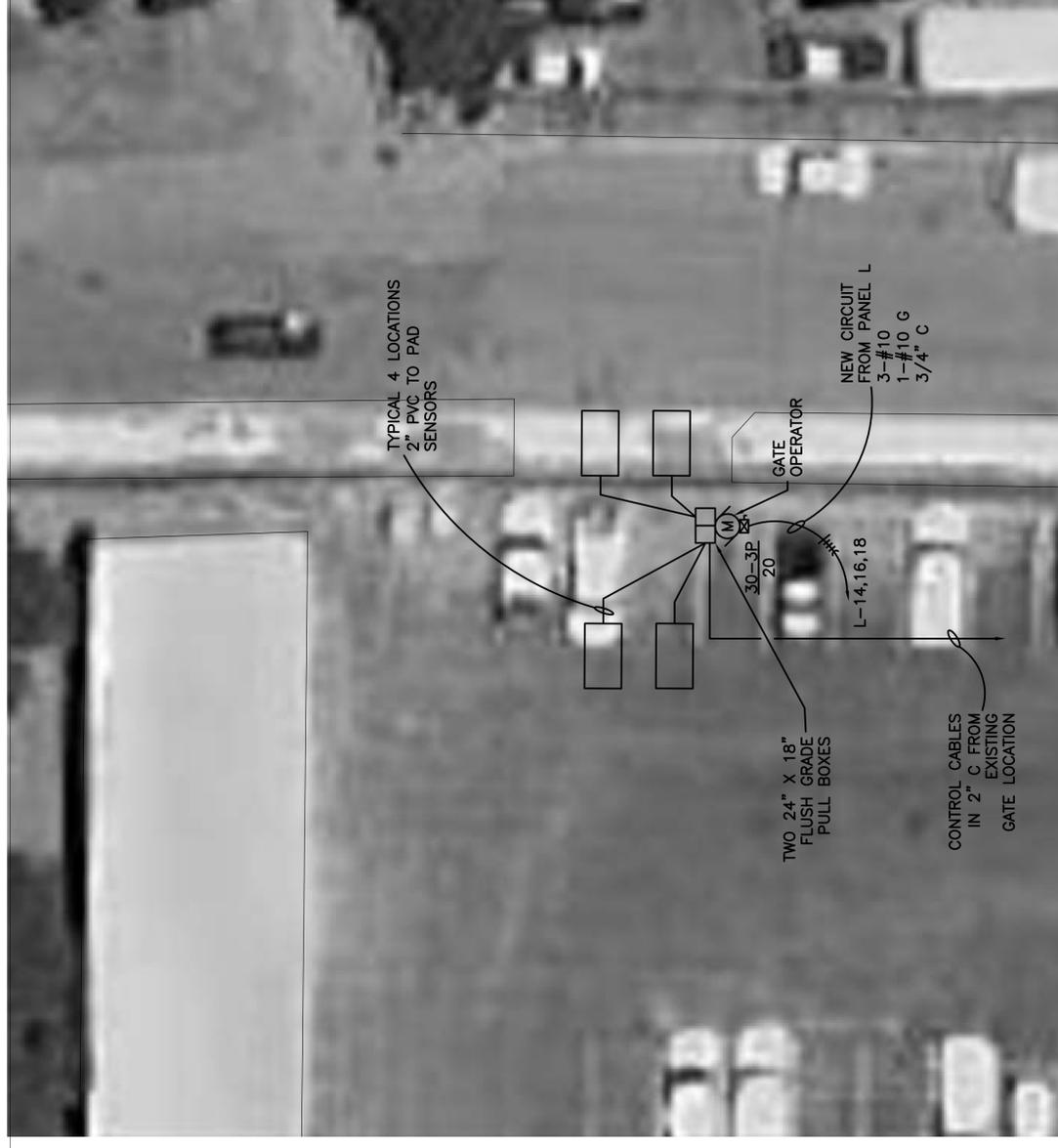
PROJECT: CITY OF SANTA FE
 801 W. SAN MATEO
 ELECTRICAL PLAN
 VEHICLE GATE

PROJECT:	13087	DESIGNED BY:	D.G.
FILE:	13087	DRAWN BY:	A.S.
DATE:	3/28/14	CHECKED BY:	D.G.
SCALE:	AS NOTED		

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274



VEHICLE GATE - ELECTRICAL PLAN
 SCALE: 1" = 20'-0"



VEHICLE GATE DETAIL
 SCALE: 1" = 10'-0"

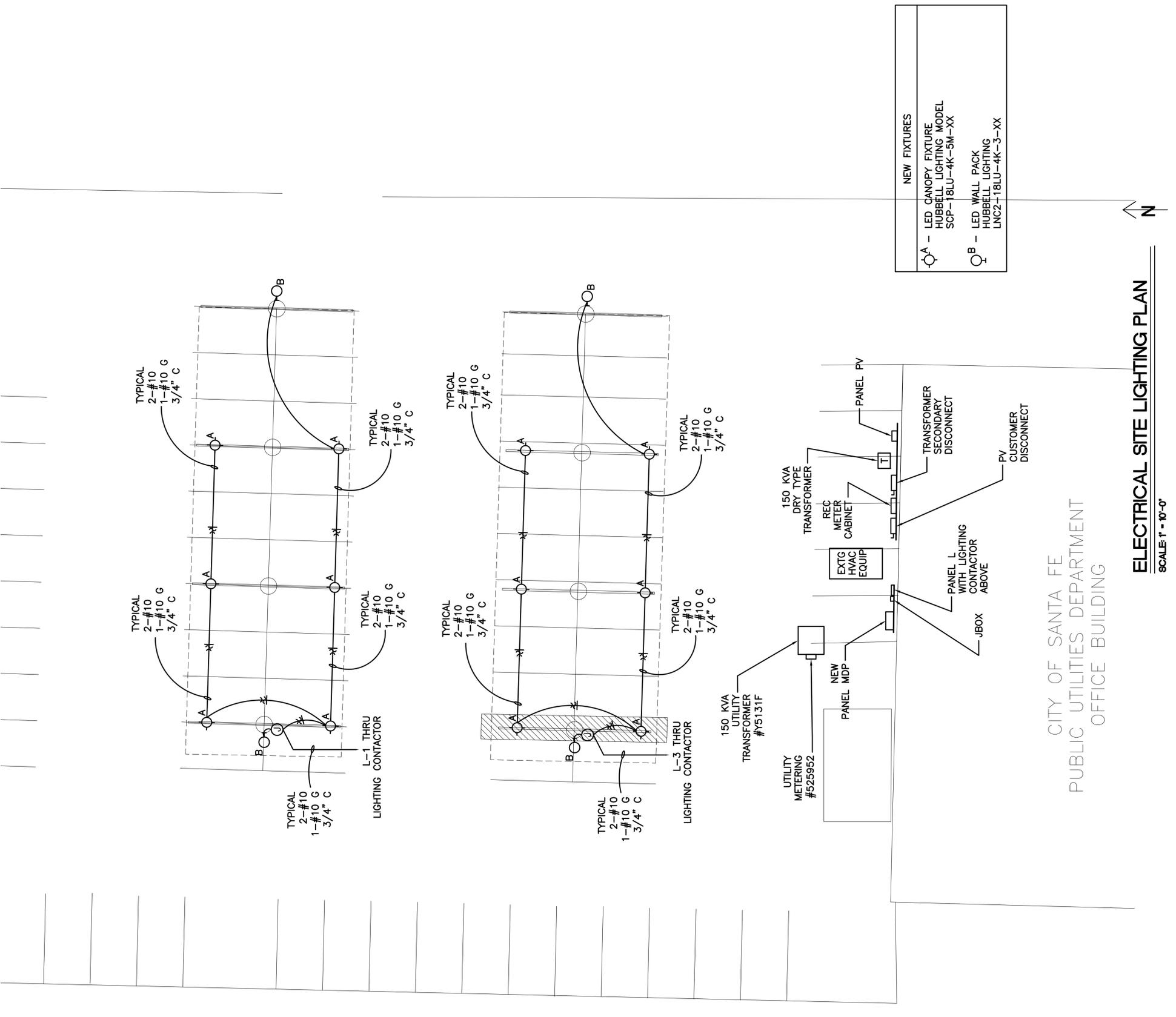


PROJECT: CITY OF SANTA FE
801 W. SAN MATEO
ELECTRICAL SITE
LIGHTING PLAN

SHEET TITLE:

PROJECT:	13087	DESIGNED BY:	D.G.
FILE:	13087	DRAWN BY:	A.S.
DATE:	3/28/14	CHECKED BY:	D.G.
SCALE:	AS NOTED		

PEAK POWER ENGINEERING, INC.
1309 Agua Fria, Santa Fe, NM 87501
TEL 505-982-2274
FAX 505-982-2274



NEW FIXTURES	
⊙ A	LED CANOPY FIXTURE HUBBELL LIGHTING MODEL SCP-18LU-4K-5M-XX
⊙ B	LED WALL PACK HUBBELL LIGHTING LNC2-18LU-4K-3-XX

ELECTRICAL SITE LIGHTING PLAN
SCALE: 1" = 10'-0"

CITY OF SANTA FE
PUBLIC UTILITIES DEPARTMENT
OFFICE BUILDING



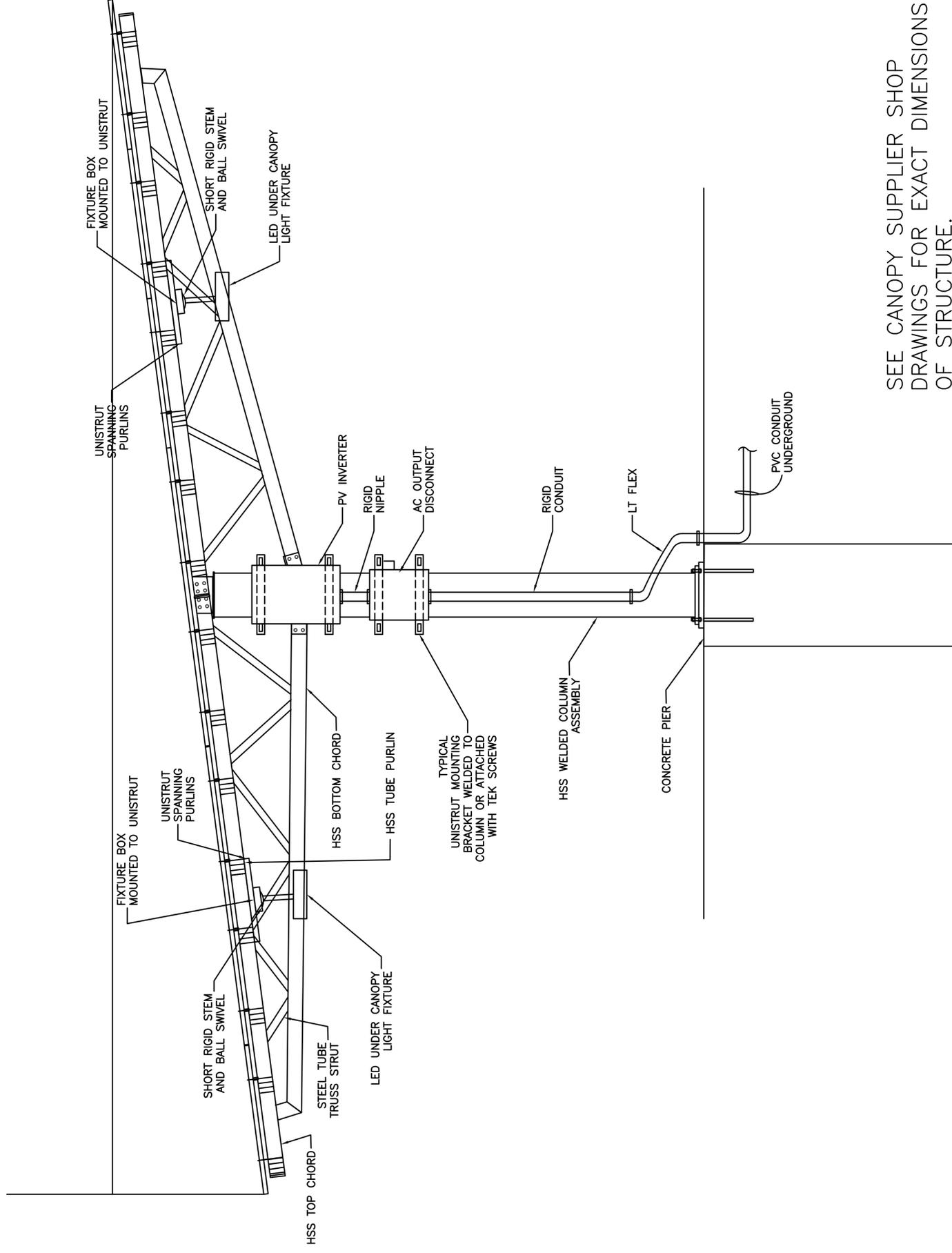
PROJECT: CITY OF SANTA FE
801 W. SAN MATEO
ELECTRICAL DETAIL

SHEET TITLE:

No.	REVISION	BY	APP.	DATE

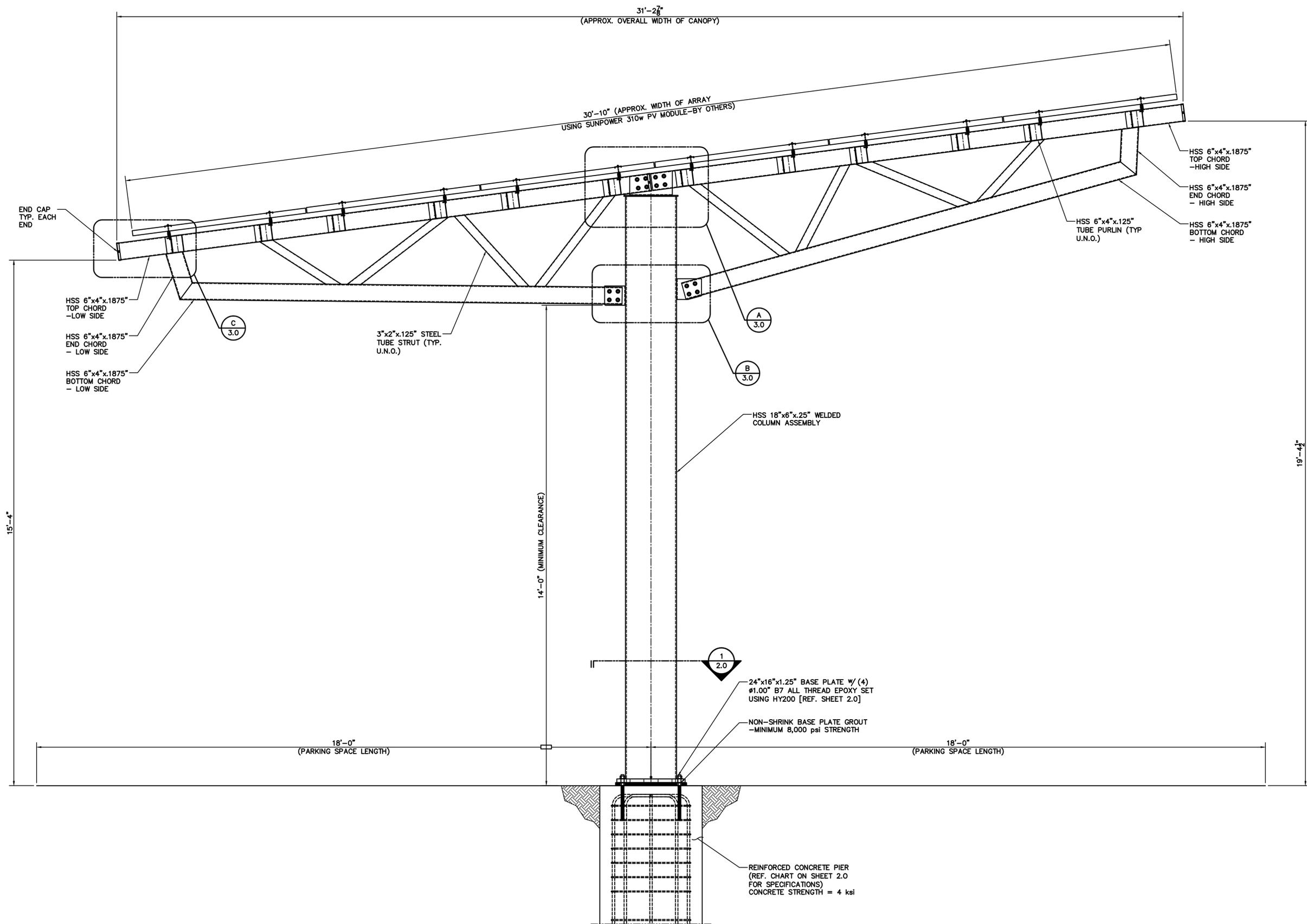
PROJECT: 13087
DESIGNED BY: D.G.
FILE: 13087
DRAWN BY: A.S.
CHECKED BY: 3/28/14
DATE: 3/28/14
SCALE: AS NOTED

PEAK POWER ENGINEERING, INC.
1309 Agua Fria, Santa Fe, NM 87501
TEL 505-982-2274
FAX 505-982-7071



SEE CANOPY SUPPLIER SHOP DRAWINGS FOR EXACT DIMENSIONS OF STRUCTURE.

FILE NAME: S:\VINE SOLAR\DESIGN\0414_A005\151510 AFFORDABLE SOLAR - GOOD-SMITH FE. IN\DRAWINGS\SUBMITTAL\CAN MATED. IN\AFFORDABLE SOLAR - CAN
 SHEET DATE: 04-16-14
 CROFTON



Total Solar Service: Design * Fabrication
 Installation * Parts * Repair Service
 5513 VINE STREET
 CINCINNATI, OHIO 45217
 513-242-2051
 FAX: 513-242-0816

The drawings and data in this document, and the intellectual property and confidential information it contains, are the property of RBI Solar, Inc. 5513 Vine Street, Cincinnati, Ohio, 45217. Any party accepting this document does so in confidence and agrees that it shall not be duplicated, in whole or in part, nor disclose to others without the written consent of RBI Solar, Inc. ©

ENGINEERS STAMP:

ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

NOT FOR CONSTRUCTION

RBI SOLAR IS NOT RESPONSIBLE FOR CONSTRUCTION THAT IS BUILT FROM SET LABELED "NOT FOR CONSTRUCTION"

REVISION RECORD

NO.	DATE	DESCRIPTION
△		
△		
△		
△		
△		
△		
△		
△		
△		
△		

CUSTOMER:
AFFORDABLE SOLAR

PROJECT ADDRESS:
CITY OF SANTA FE
801 WEST SAN MATEO
SANTA FE, NM
ADDRESS

R.B.I. NO.:
RBI #

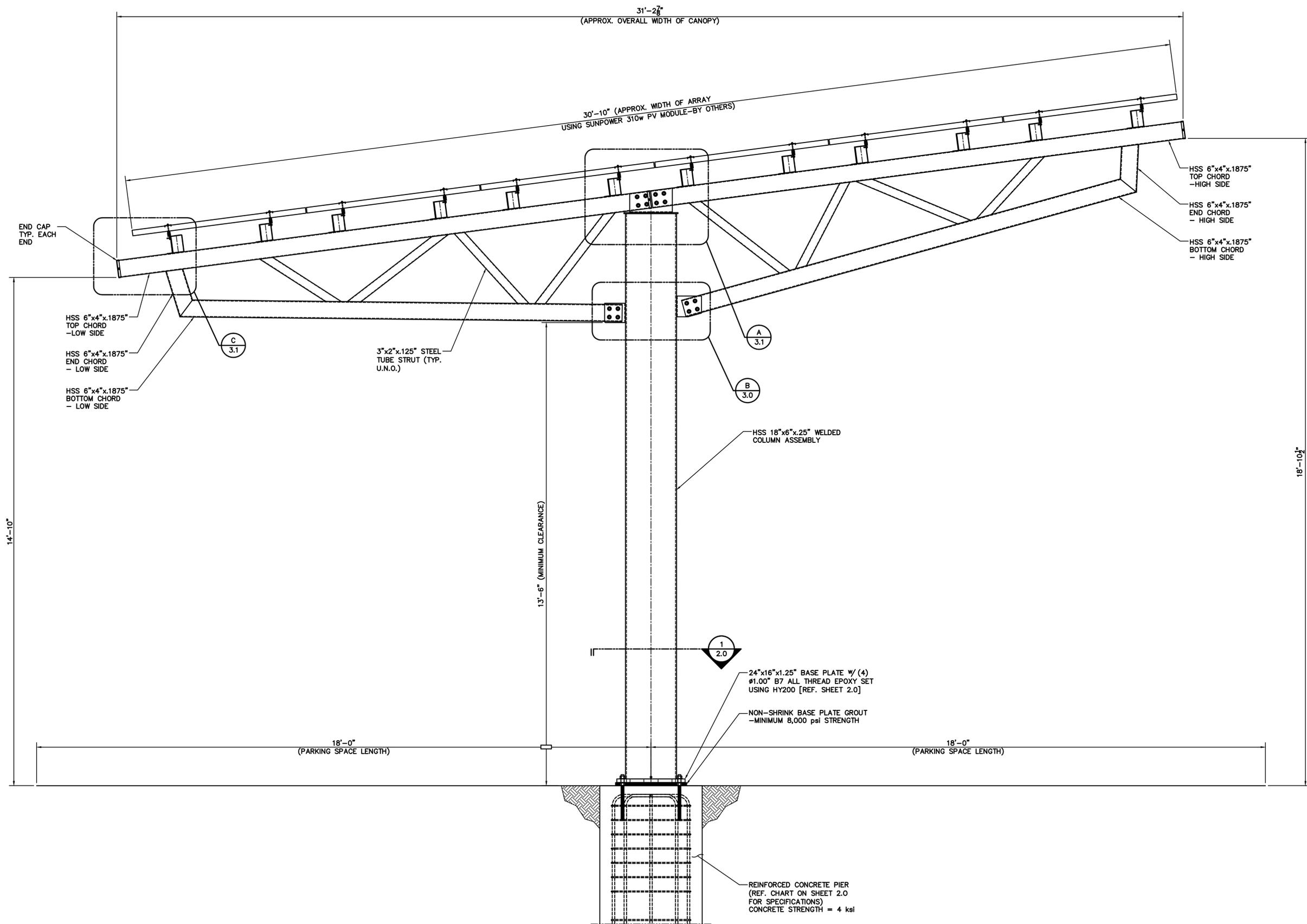
SHEET TITLE:
TRUSS ELEVATION

DRAWN BY: CTN **CHECKED BY:**

DOCUMENT DATE:
04/16/14

SHEET:
1.0

FILE NAME: S:\VIB SOLAR\DESIGN\0414_A005\151510 AFFORDABLE SOLAR - 0000-SANTA FE, NM\DRAWINGS\SUBMITTAL\CAN MATED, NM AFFORDABLE SOLAR - CAN
 SHEET DATE: 04-16-14



Total Solar Service: Design * Fabrication
 Installation * Parts * Repair Service
 5513 VINE STREET
 CINCINNATI, OHIO 45217
 513-242-2051
 FAX: 513-242-0816

The drawings and data in this document, and the intellectual property and confidential information it contains, are the property of RBI Solar, Inc. 5513 Vine Street, Cincinnati, Ohio, 45217. Any party accepting this document does so in confidence and agrees that it shall not be duplicated, in whole or in part, nor disclose to others without the written consent of RBI Solar, Inc. ©

ENGINEERS STAMP:

ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

NOT FOR CONSTRUCTION

RBI SOLAR IS NOT RESPONSIBLE FOR CONSTRUCTION THAT IS BUILT FROM SET LABELED "NOT FOR CONSTRUCTION"

REVISION RECORD

NO.	DATE	DESCRIPTION
△		
△		
△		
△		
△		
△		
△		
△		
△		
△		

CUSTOMER:
AFFORDABLE SOLAR

PROJECT ADDRESS:
CITY OF SANTA FE
801 WEST SAN MATEO
SANTA FE, NM
ADDRESS

R.B.I. NO.:
RBI #

SHEET TITLE:
CANTILEVER TRUSS
ELEVATION

DRAWN BY: CTN **CHECKED BY:**

DOCUMENT DATE:
04/16/14

SHEET:
1.1



Total Solar Service: Design * Fabrication
Installation * Parts * Repair Service
5513 VINE STREET
CINCINNATI, OHIO 45217
513-242-2051
FAX: 513-242-0816

The drawings and data in this document, and the intellectual property and confidential information it contains, are the property of RBI Solar, Inc. 5513 Vine Street, Cincinnati, Ohio, 45217. Any party accepting this document does so in confidence and agrees that it shall not be duplicated, in whole or in part, nor disclose to others without the written consent of RBI Solar, Inc. ©

ENGINEERS STAMP:

ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

NOT FOR CONSTRUCTION

RBI SOLAR IS NOT RESPONSIBLE FOR CONSTRUCTION THAT IS BUILT FROM SET LABELED "NOT FOR CONSTRUCTION"

REVISION RECORD

NO.	DATE	DESCRIPTION
△		
△		
△		
△		
△		
△		
△		
△		
△		
△		

CUSTOMER:
AFFORDABLE SOLAR

PROJECT ADDRESS:
CITY OF SANTA FE
801 WEST SAN MATEO
SANTA FE, NM
ADDRESS

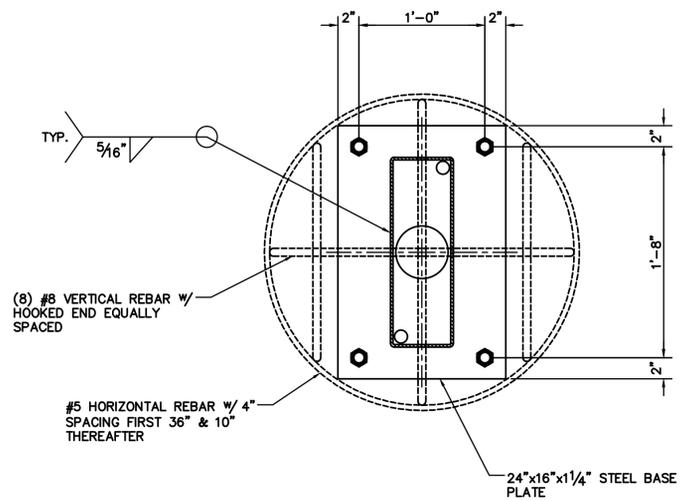
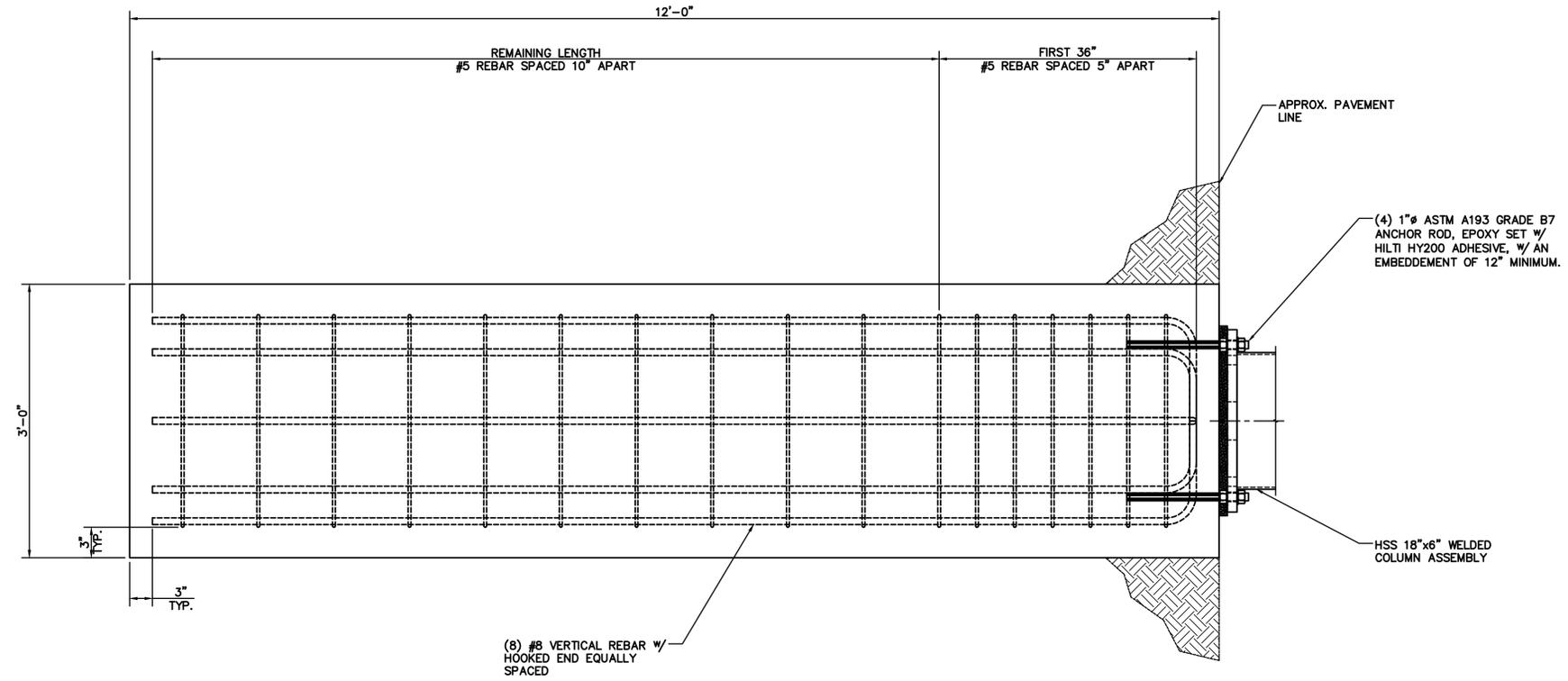
R.B.I. NO.:
RBI #

SHEET TITLE:
BASE PLATE/PIER
DESIGN DETAILS

DRAWN BY: CTN CHECKED BY:

DOCUMENT DATE:
04/16/14

SHEET:
2.0



2 BASEPLATE DETAIL
2.0 SCALE: 3" = 1'-0"

A BASEPLATE/FOUNDATION DETAIL
2.0 SCALE: 1" = 1'-0"

